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FACILITY FUNDAMENTALS:

Swimming Pools

Alberta
RECREATION AND PARKS
Recreation Development Division

ON
61/1120

CANADIANA
APR - 5 1984

facility fundamentals: Swimming Pools

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Ministry of Tourism and Recreation
Ministère du Tourisme et des Loisirs
Ontario

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INTRODUCTION

Different kinds of design guidelines are written to aid the designer in his research and the client to understand the issues. One type is in the form of thick manuscripts, complete in information but lengthy and tedious. The client, as well as the designer, unless highly motivated, does not usually read an entire book and take notes. The design guidelines should therefore be in a clear and concise format, otherwise they will just end up as another reference book on the shelf.

The most common kind of design guideline is perhaps the prototype design. Contrary to its intended purpose, however, prototype design sometimes hinders the designer rather than aids him in the design process. It proposes one specific solution regardless of the geographical, climatic, social, economic, cultural, and other criteria unique to individual sites. It is harmful to the client as it implants in him a strong pre-conception of what the physical form should be even before the building is designed. The design process that follows is often a weary struggle between the client and the designer.

Although the building form cannot be justifiably standardised, the design ideas generated from the analysis of the facility type are common to and adaptable in all buildings for the same function regardless of the site. These ideas, better known as the 'design concepts' in the architectural profession, constitute a vocabulary of space. A prototype is merely one of the many possible combinations of the vocabulary. It can easily be conceived that with this form-generating mechanism different buildings can be generated for different sites - diverse in form but one in spirit.

This book is a file of such ideas on the design of swimming pools. Each idea centres around a spatial element of the facility, which is isolated from all exterior determinants and then analyzed from the user point of view. The human behaviour, psychological preference, activity and circulation patterns, administration and maintenance efficiency, and all other design factors are utilized to evaluate and develop an ideal design solution for the spatial component. No physical form is laid out for this component design; rather, bubble diagrams and abstract sketches are used to illustrate the idea. This set of ideas can then be grouped selectively by different clients for different projects. The client can also change, refine or develop more ideas using the original package as a skeleton to build upon. A lot of the details that the designer so often overlooks can be detected by the client in this critical exercise.

The client, who is more sensitive and concerned with performance of building components, finds this personal input process to the design development more comprehensible. The architect, on the other hand, gains a clearer understanding of the client's hidden needs which are often locked in the communication gap but can surface through this thought process. Aided with this useful checklist, he can now combine and transform these ideas with innovation into a design solution.

This methodology was developed by Christopher Alexander of the Centre for Environmental Structure, Berkeley, California in 1968, as an attempt to make the architectural design process comprehensible to and usable by the layman. Alexander called it the 'pattern language'. I have avoided the use of the term as it gives an impression that it is some form of sophisticated language like computer language, which often alienates the general public.

These design ideas on swimming pools represent an ideal solution. It is obviously impossible for them to be adapted in every project because of individual project limitations. In such case the ideal solution can be adjusted to fit into the financial context and the idea behind it will help to monitor the modifications. Local health and building codes should also be reviewed to ensure compliance to regional requirements.

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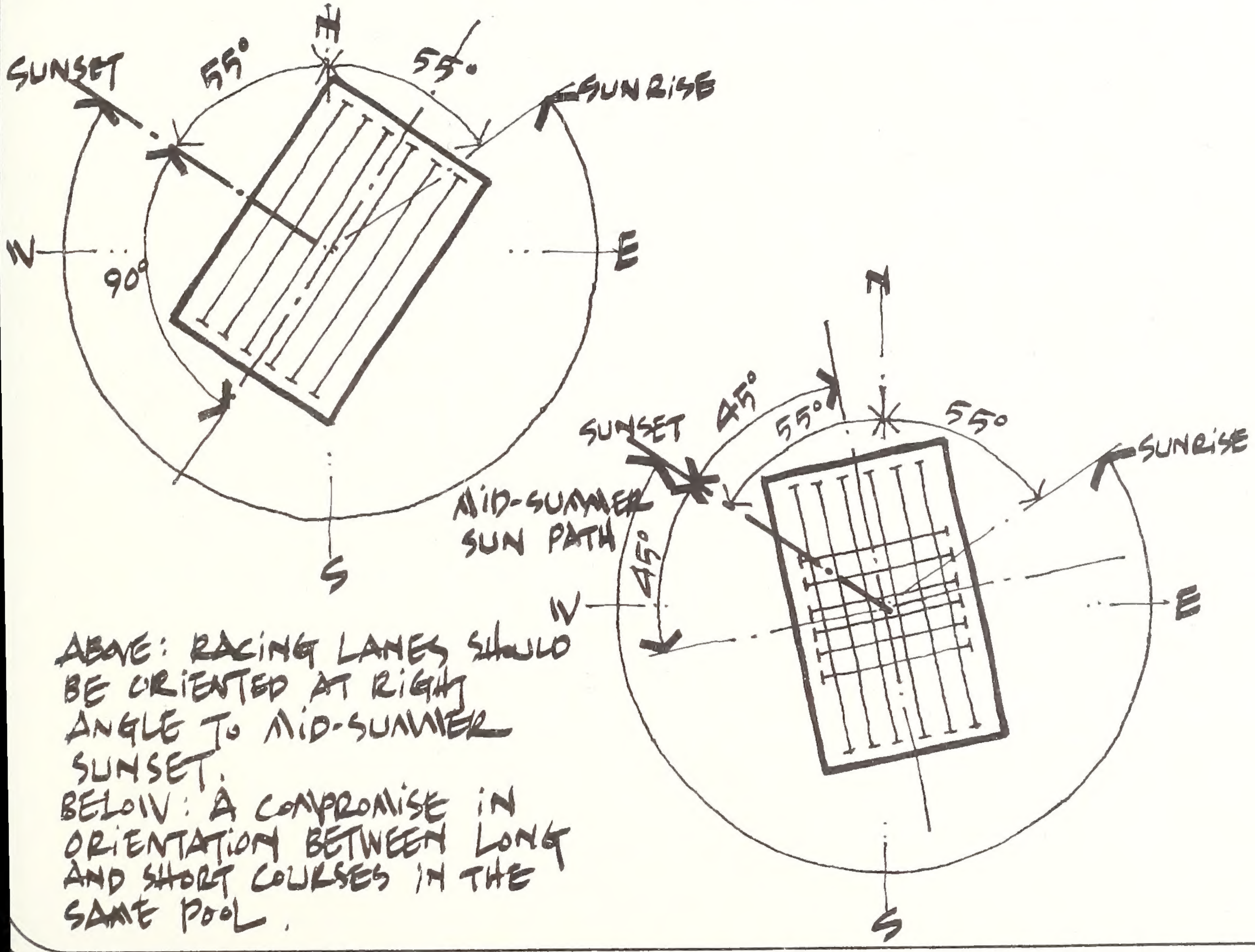
July 6, 1977

ORIENTATE FROM SUN AND WIND

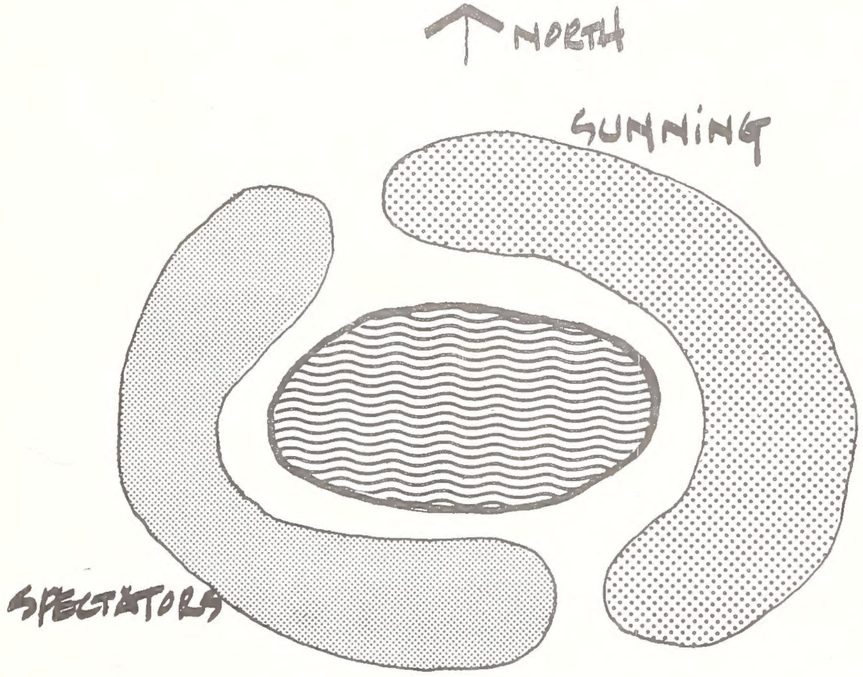
ORIENTATE SPECTATORS, LIFEGUARDS AND DIVING TOWER AWAY FROM, AND THE SUNNING COURT TOWARDS, THE AFTERNOON SUN. RACING LANES SHOULD BE AT RIGHT ANGLE TO THE SUMMER SUN AT ITS LOWEST. THEY SHOULD ALSO BE AT RIGHT ANGLE TO THE PREVAILING WIND OR BE WIND-SCREENED.



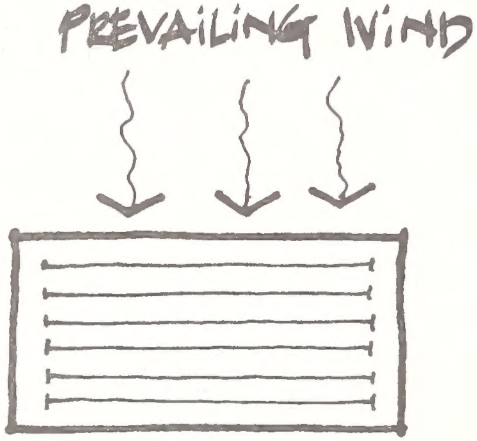
ABOVE: RACING LANES SHOULD BE ORIENTED AT RIGHT ANGLE TO MID-SUMMER SUNSET.
BELOW: A COMPROMISE IN ORIENTATION BETWEEN LONG AND SHORT COURSES IN THE SAME POOL.

The sun and wind are two important factors that influence the orientation of outdoor pools and allocation of the various ancillary spaces. These environmental elements should be carefully analyzed before such decisions are made.

The sun does not affect the swimmers as much as the viewers. Direct glare and reflected glare make the eyes uncomfortable and pool activities difficult to watch. Analysis of pool use patterns shows that most people go swimming in the afternoon, and it is also in the afternoon when most competitions take place. The spectator stands should, therefore, face the north-east direction. The racing lanes, on the otherhand, should be oriented at right angle to the sunset direction in the swimming season, i.e. summer months, which is about 55° west of north in Ontario (55° 30' for 45° N. Lat. see Timesaver Standards for Architectural Design Data p.79). Pools of combination of 50m. and 25m. courses (see diagram) can be oriented at 45° to the low sun in order to keep swimmers of either course from looking into direct sun. The diving tower should face north to keep reflected glare from the



ORIENTATE THE SPECTATORS FROM, AND THE SUNNING AREA TOWARDS, THE AFTERNOON SUN.



RACING LANES SHOULD BE AT RIGHT ANGLE TO THE PREVAILING WIND OR BE WINDSCREENED WITH TREES, WALLS, EARTHMOUNDS OR THE BATH-HOUSE STRUCTURE.

divers. The sunning deck should be exposed to the south-west to receive maximum sunshine in the afternoon. Lifeguard stations are positioned where needed but should be oriented away from the sun whenever possible.

Wind does not pose as much problem. The prevailing wind should be at right angle to the racing lanes so as to have the least effect on the competitors. Strong wind can be deflected by trees, walls, earthmounds and the bathhouse structures.

Indoor pools are least affected by these factors. Some controlled sunlight inside the pool hall is desirable. (see patterns Functional Windows and Skylighting Indoor Pools). If an outdoor sunning court is included in the complex it should be on the south or west side. Prevailing wind can be directed to ventilate the pool hall.

SEPARATE POOLS

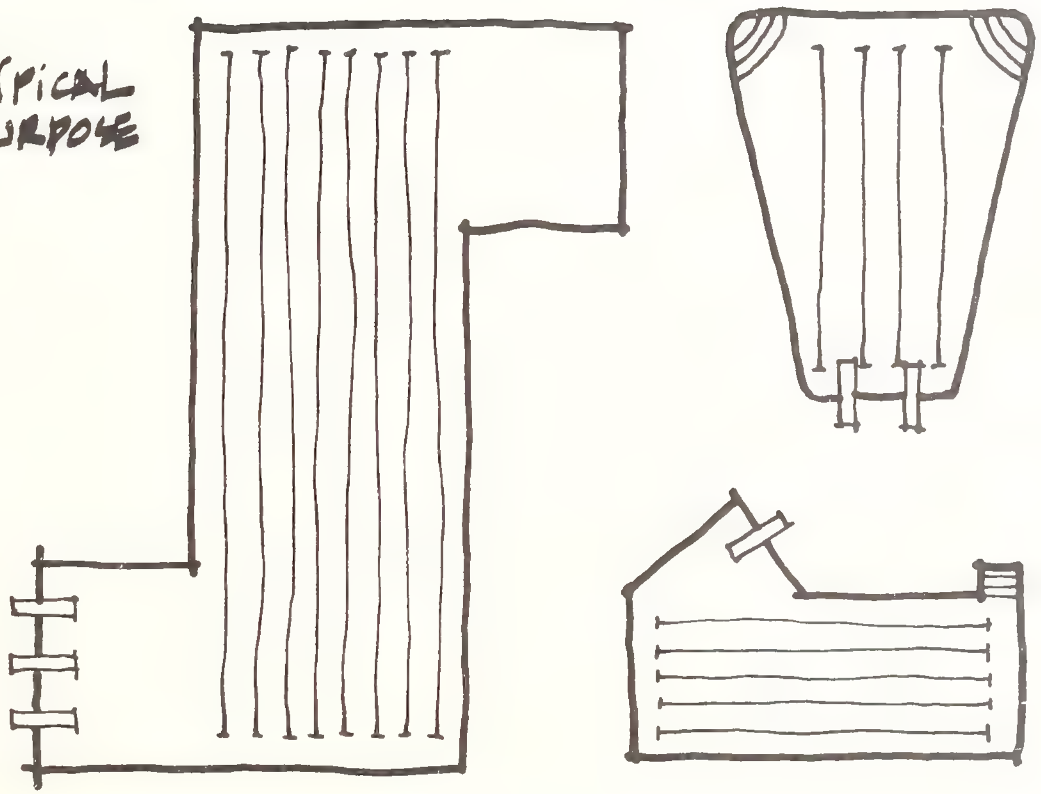
A MULTI-PURPOSE POOL MAY NOT PROVIDE FOR THE DIVERSIFIED NEEDS OF DIFFERENT TYPES OF SWIMMERS.

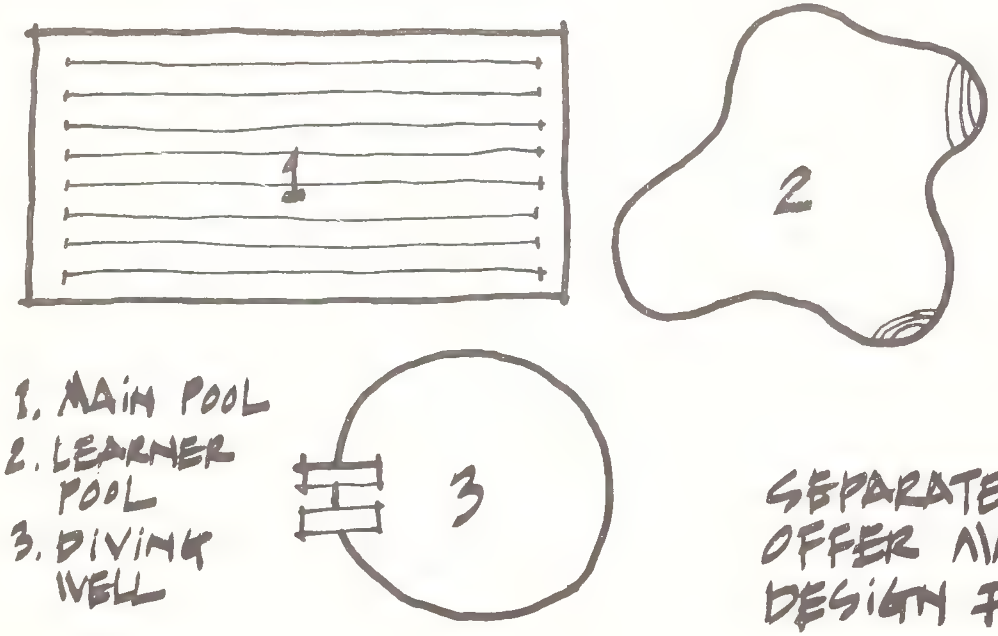
SEPARATION OF MAIN POOL, DIVING POOL AND LEARNER POOL PROVIDES GREATER DESIGN FREEDOM, INDIVIDUAL ENVIRONMENTAL TREATMENT, HIGHER SAFETY FACTORS AND MORE INTENSE USE OF THE POOLS.

In aquatic complexes the optimum design approach is to separate the different pools rather than have one multi-purpose pool. This concept is recommended by the British Amateur Swimming Association as well as the Sports Council. Analysis of the users of different pools shows the distinct diversity in their needs. The greatest difference exists between the learner pool and the main pool. The former is for children and non-swimmers who go there for playing and soaking, while the latter is for more serious swimmers trying to improve their swimming, keeping in shape, or training for competitions. The main pool hall is spectator-oriented and the pool should stand out as a stage for performance. On the other hand, in the learner pool the emphasis is on swimmer participation, and the design of the environment is of more importance. These different needs are reflected in different requirements in lighting (see pattern Functional Windows), heating, ventilation, acoustics, and water temperature.

Separation of pools also results in a high safety factor. Accidents are reduced because non-swimmers cannot venture into deeper water where they may get into difficulty. Accidents caused by divers diving into swimmers will also be

SOME TYPICAL MULTI-PURPOSE POOLS



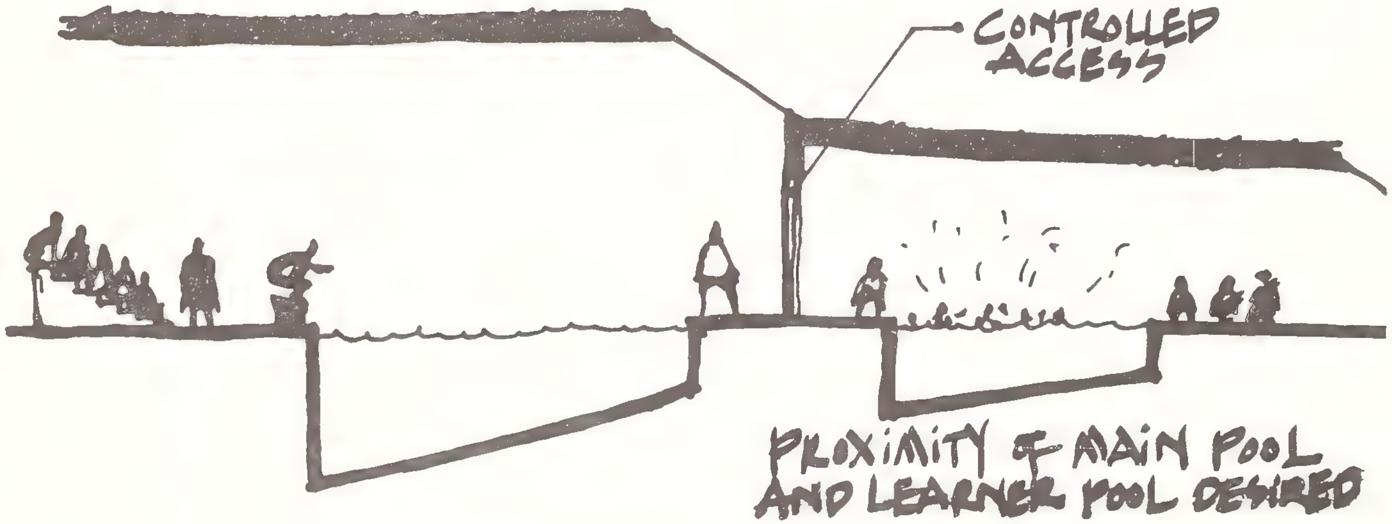


SEPARATED POOLS OFFER MAXIMUM DESIGN FREEDOM.

eliminated by providing separate diving wells. Another asset is the flexibility for simultaneous use of the pools for different activities. The children can still enjoy themselves in the learner pool when there are competitions or performances taking place in the main pool. When there are classes held in the learner pool, the public can be admitted to the main pool.

To reinforce the physical separation an acoustical barrier could be maintained to keep the noise from distracting competitions or classses. There should also be a controlled access between the learner pool and the main pool to prevent youngsters from running around, distracting, and posing a nuisance to the main pool users.

On the other hand, the pools should be in close proximity for ease of staffing, control, as well as economy and efficiency in service layout. Parents who swim in the main pool also want to be close to their children in the learner pool. The partition should be removable, such as glass sliding doors or a folding wall, to enable more flexibility in operation. For competitions the swimmers can use the learner pool for warm-ups before their events.

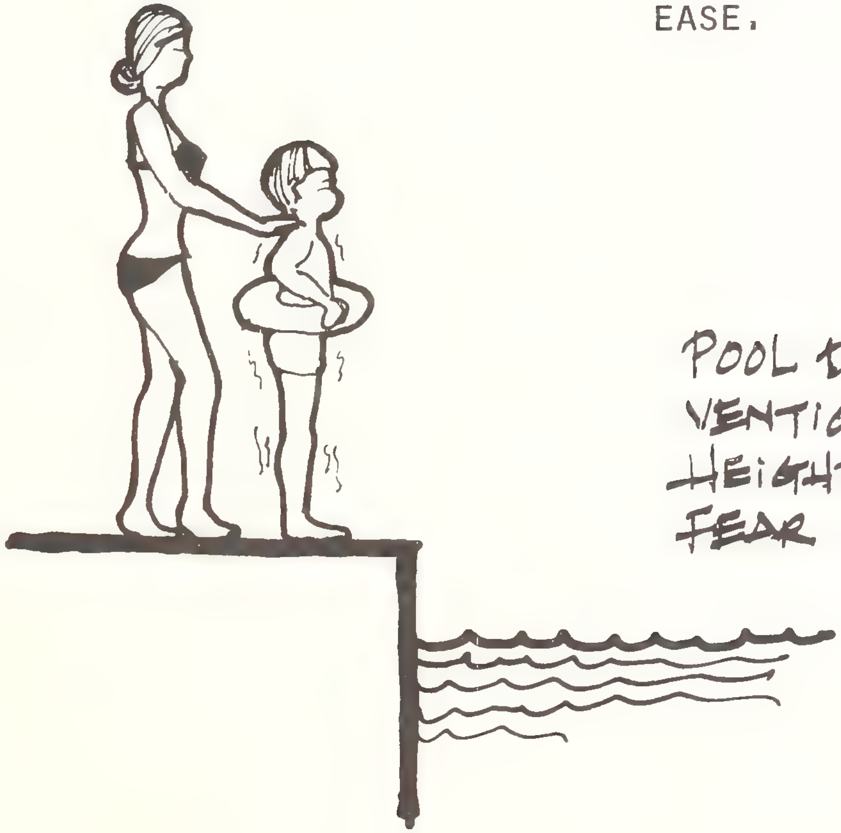


PROXIMITY & MAIN POOL AND LEARNER POOL DESIRED

DECK-LEVEL POOL

THE LEVEL DIFFERENCE BETWEEN DECK AND WATER IN CONVENTIONAL SWIMMING POOLS IS INTIMIDATING TO CHILDREN AND MAKES IT DIFFICULT FOR SWIMMERS TO GET OUT OF THE WATER.

DECK-LEVEL POOLS RAISE THE WATER TO THE SAME LEVEL AS THE POOL DECK, THEREBY SOFTENING THE DRY-WET TRANSITION. SWIMMERS CAN GET OUT OF THE WATER WITH EASE.

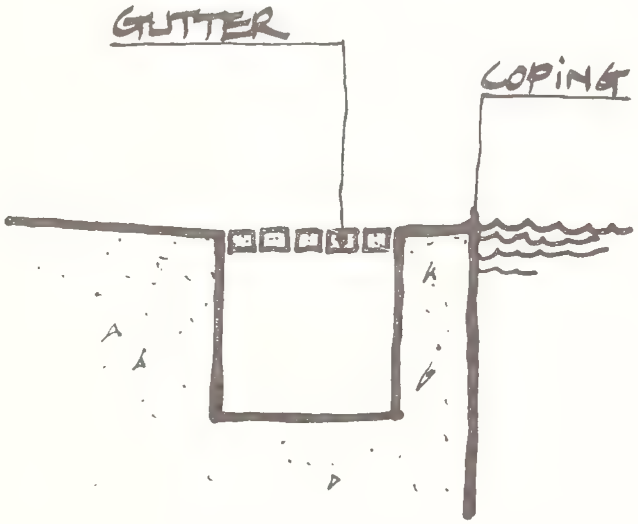


POOL DROP IN CONVENTIONAL POOLS HEIGHTENS CHILDREN'S FEAR OF WATER.

A space can be defined by physical partitions, i.e. walls, fences and gates. It can also be defined in many other ways that we consciously see or unconsciously feel. In swimming pools the spatial boundry between the pool-deck and the pool water is very strong. It is defined by the change of medium, texture, temperature and level. This definition is sometimes too strong for young children first learning to swim. These four elements accompanying the fear of water and the loss of balance make the pool forbidding to the children. Efforts should be made to soften this dry-wet relationship in learners' pools.

One solution is to raise the pool water level to the same level as the pool deck by using the rimflow gutter system, thereby eliminating the spatial separation by level change. The pool water thus appears more inviting to the swimmers. Another advantage is that it becomes easier for the swimmers to get in or get out of the water. Recessed stairs and ladders are also installed however.

Another type of learners pool does not drop the water level below but rather, raises it above the deck level by about two feet or more. The rationale behind this



RIMFLOW GUTTER SYSTEM

THE GUTTER SHOULD BE OF A BOLD PATTERN AND COLOUR, AND THE COPING OF A DISTINCTIVE COLOUR TO CONTRAST WITH THE POOL DECK AND THE WATER.

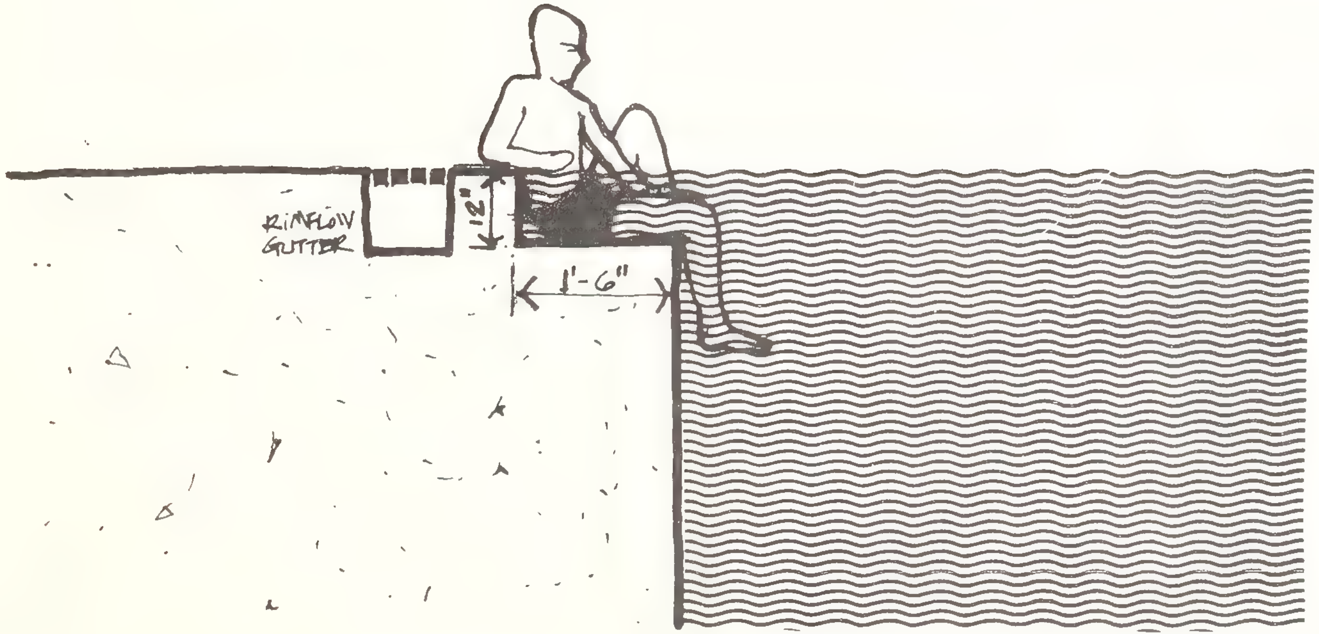
design is that the instructor can teach and watch the students without bending down. This dry-wet partition is even stronger that the pool-drop in conventional pools because the view of water is reduced by the two-foot wall around the pool. The children cannot see the water from afar. The dry-wet transition is too abrupt and it is more difficult for the small children to get in and out of the pool. The steps to floor level are constantly wet and might lead to accidents. It is also more difficult for the instructors to supervise the students because of the lower angle of view of the water surface. Swimming class is only one of the many programs of a swimming pool. To design a pool for the convenience of a few instructors at the expense of the comfort and safety of the general public hardly seems to be justifiable. Recreational swimmers who compose the majority of the users should be given more emphasis in the design. "This concept of the pool as a training tank reflects the original intentions of those who comissioned the big municipal swimming baths, an intention of 'teaching the populace, especially children to swim; teaching people to save others'; and so on, with a mention of recreation barely scraping in at the end of the list." (Pools for Sub Aqua Use, British Sub Aqua Club.)

One obvious problem of deck-level pools is the invisibility of the pool-edge. This might constitute a safety hazard. The perimeter gutter around the pool can be of a bold pattern and colour to warn the approaching swimmers. The coping along the pool edge should be of a distinctive colour (usually darker colour) to contrast with the pool deck and the water. The raised curb of the coping also discourages the swimmers from making dangerous dives from the pool-side.

SHALLOW SHELF

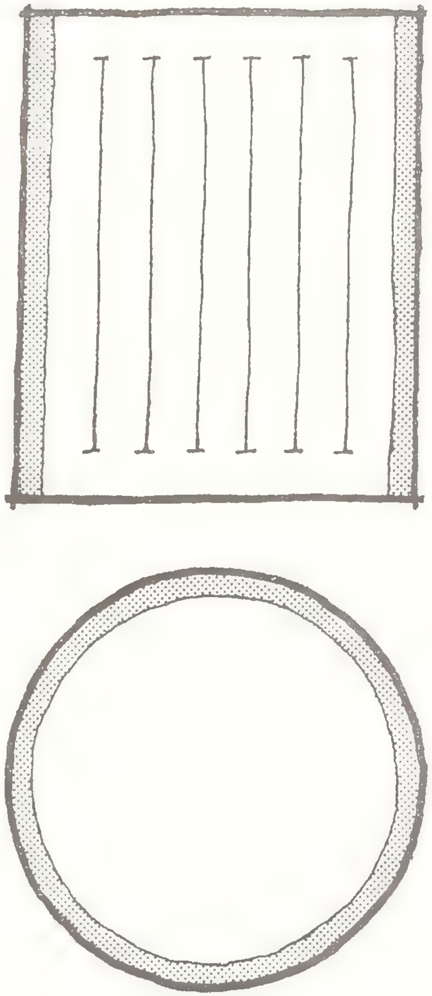
IT IS DIFFICULT FOR THE EXHAUSTED SWIMMER TO CLIMB OUT OF THE POOL.

PROVIDE TWO-STEP SHELVING ALONG THE POOL SIDE SO THAT THE SWIMMERS CAN CLIMB OUT OF THE WATER EASILY. IT ALSO OFFERS SWIMMERS A CHANCE FOR RESTING BUT WITHOUT LEAVING THE POOL.



Getting out of the water after a long swimmming exercise is most difficult for exhausted swimmers. They have to use their arm strength to lift their whole body weight out of the water and rest it on the pool deck, which is 6" to 12" higher than the water level. Most swimmers lack the strength to do this after a hard work-out and it can be observed that they normally just hang on to the deck coping to catch their breath until they have the strength to get out of the water. Others edge along the pool side to the ladders and climb out. Children obviously have more difficulty getting out of the water than adults.

A rimflow gutter system which raises the water to the same level as the deck is one solution (see pattern - Deck level pool). Another solution is the installation of a recessed safety ledge along the pool sides so that the swimmers can stand on it and rest. It should recede 6" into the pool wall and about 4'-3" below water surface to provide sufficient standing room and keep the head above the water. Immersed staircases and ramps take up too much space and can only be installed at the shallow end of the pool. A shallow shelf immered about one foot below water and lining the pool walls seems to



SHALLOW SHELF IN MAIN POOL AND FREE-FORM RECREATIONAL POOL.

provide a satisfactory answer. The swimmer can easily place his body on the shelf with the help of floatation. Then he can either sit there to rest with the body immersed, or just climb out of the water and rest on the pool deck (see pattern - Pool Side Rest Area). This arrangement gives the choice of resting without leaving the pool. Entering the pool is also made easier. A black edging on the steps provides greater visibility for underwater swimmers as well as discourages dangerous dives from the pool side.

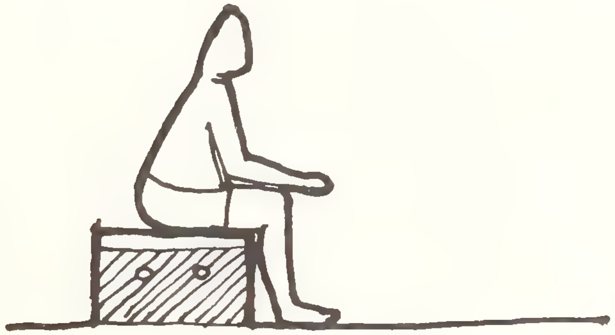
This installation of a shallow shelf can line the sides but not the ends of a competitive pool. More unused space at the sides of the pool reduces water resistance to the swimmers so that they can in turn swim faster ("Montreal Olympic pool to help swimmers shatter world records" Frank Litsky, Pools, Parks & Rinks March/April 1976). Free form pools, on the other hand, can have the shelving all around.

POOL SIDE REST AREA

EXHAUSTED SWIMMERS CLIMBING OUT OF THE POOL CAN FIND NO APPROPRIATE RESTING PROVISION EXCEPT TO LIE DOWN ON THE DECK.

PROVIDE A COMFORTABLE RESTING ZONE NOT MORE THAN TEN FEET FROM POOL EDGE, WHICH HAS A VIEW OF THE POOL ACTIVITIES.

LYING ON POOL DECK IS THE MOST COMMON THOUGH UNCOMFORTABLE FORM OF RESTING AFTER SWIMMING.



HEATED POOL-SIDE SEATS ARE COMMON IN EUROPEAN POOLS.

After laborious work-outs, swimmers need a place to rest and catch their breath before proceeding to other activities. This need is not usually given any design consideration in many pools but is provided by other spaces:

(1) pool deck - the commonest form of resting in pools is by lying down on the pool deck. This is less than comfortable as the deck finish is too hard to lie on for long. In indoor pools there is rapid body heat loss to the deck and the body becomes chilled after a short time. On the other hand, outdoor pool decks can get very hot under the summer sun. In either case, the swimmers cannot lie for a long time and would soon change to a reclining position supported by the elbows or arms as they desire a view of the pool activities while they rest.

(2) pool side benches - more common in European pools than in North America. They are well-used most of the time, especially the heated ones in indoor pools. The benches with no backs are less desirable as swimmers want to relax their whole body rather than legs alone.

(3) locker rooms - locker rooms are designed for changing and not

LOCKER ROOMS ARE DESIGNED FOR CHANGING AND NOT FOR RESTING.

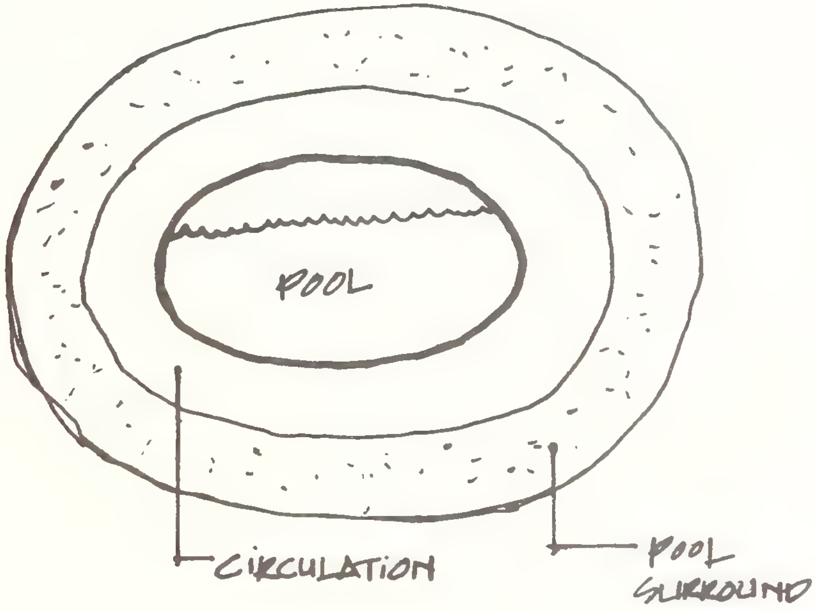
SNACK BAR IS A GOOD RESTING SPACE BUT IT IS USUALLY TOO FAR AWAY FOR AN EXHAUSTED SWIMMER TO GET TO.

for resting. There is too much in and out traffic. The smell and moisture often magnify the stuffy atmosphere. The noise and harsh light suggests that people move along. The seats are not comfortable and prolonged sitting often embarrasses people getting changed.

(4) snack bar - the snack bar is a good resting space but it is usually too far away for an exhausted swimmer just out of the water.

From these observations we can draw up the following criteria for an optimum pool side rest area:

- It should not be too far away from the pool, probably a maximum of ten feet and be out of the way of through-traffic.
- It should not be concentrated. It should run along one side or two sides of the pool.
- It should not be overcrowded but make it easy to find a space even in peak periods.
- It should provide a view of the pool.
- It should be comfortable and be provided with amenities like drinking fountains and shade.

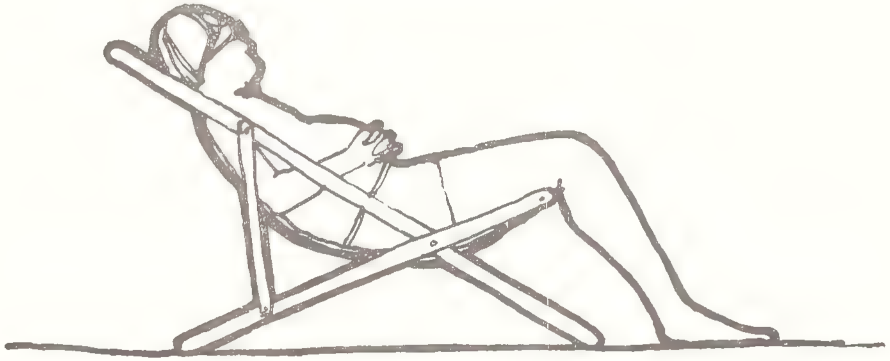


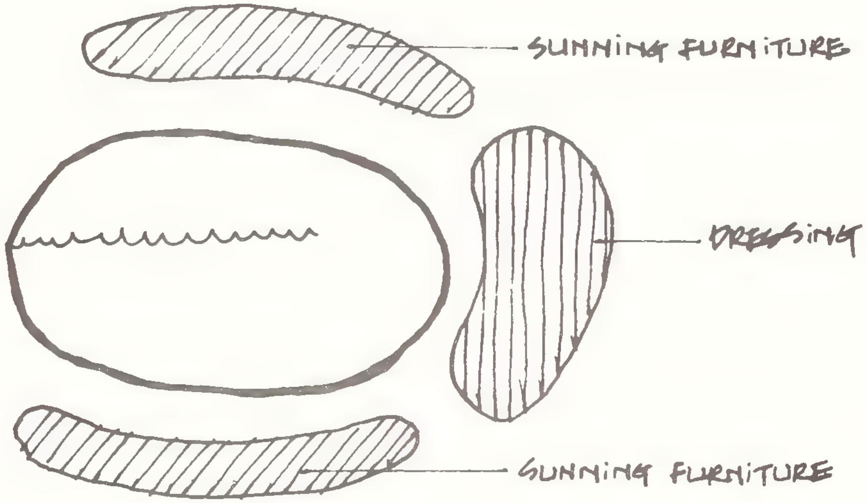
It should be a space where people can stay for a legitimate reason without feeling that they must move on.

There are various solutions to satisfy these criteria. The most appropriate one seems to be the provision of a "comfortable reclinable pool surround." It is all around the pool and is not fully occupied at any time. It also gives good close views of the pool activities. It can be in the form of a landscaped earthmound around the pool deck that people can lie on in a reclined position. Grass is not very comfortable for the bare-body to lie on however. The mound could be formed of concrete or bricks and be carpeted or wood-decked. It could even be an inflatable mound, clean and comfortable to lie on and perhaps air-conditioned or water-filled.

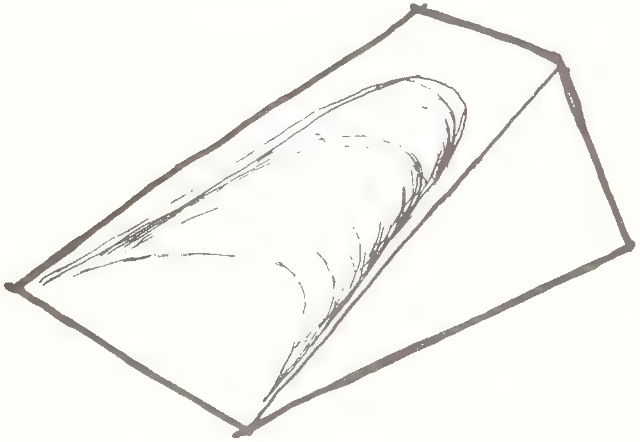
Sunning furniture scattered along one or two sides of the pool is another solution (see pattern Comfortable Parents' Seating Area). This type of comfortable reclined furniture is most suitable for reposing after vigorous exercise. The snack area should also use some of this type of furniture besides the dinette-type chairs and tables.

Since swimmers do not mind sitting on the pool deck, the furniture could be just a wedge-shape to support the back. Vacuum-formed plastic fits the body contour and is light and easy to maintain. The swimmer sits on the pan-like seat, thereby using his own weight to stabilize the wedge from moving away from him as he leans back.

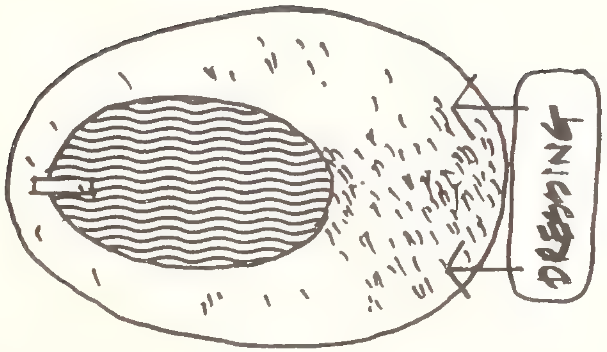




PLASTIC WEDGE-SHAPES FOR SUPPORTING THE BACK.

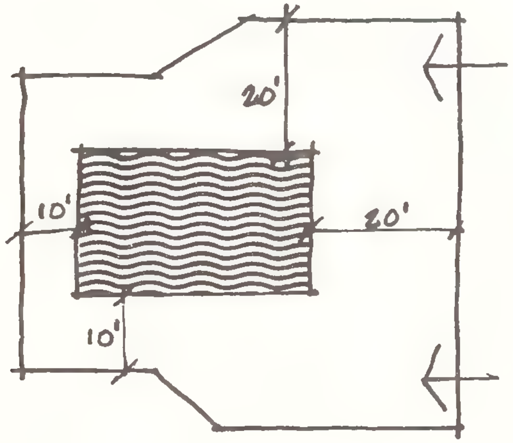


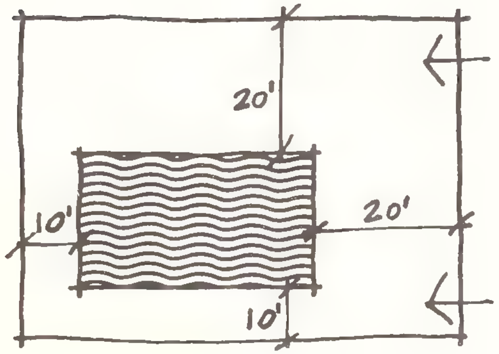
USABLE POOL DECK



SWIMMERS DO NOT SCATTER EVENLY ON THE POOL DECK. THEY CONCENTRATE AROUND THE BATHHOUSE.

MAKE THE POOL DECK OUTSIDE THE BATHHOUSE TWENTY FEET WIDE AND GRADUALLY NARROW IT DOWN TO TEN FEET WIDE AT THE DEEP END.





Most conventional pools provide a deck space of equal width all around the pool regardless of traffic and use patterns. Dressing rooms are to be located at the shallow end of the pool so that the swimmers can step into shallow water before they advance to deeper water. This dry-wet transition is smooth, gradual and safe. It is also to this end which parents gravitate for teaching their youngsters to swim. The pool deck at this end becomes a heavy traffic zone as compared to the deep end. Sun-bathers, on the other hand, scatter around the pool deck midway between both ends, not too close to the heavy traffic and noise, and not far enough away to feel isolated. The deep end is only used by the few divers and the lifeguards. The pool deck, therefore, should be wider at the shallow end and narrowing off to the deep end where only traffic space for passage is allowed.

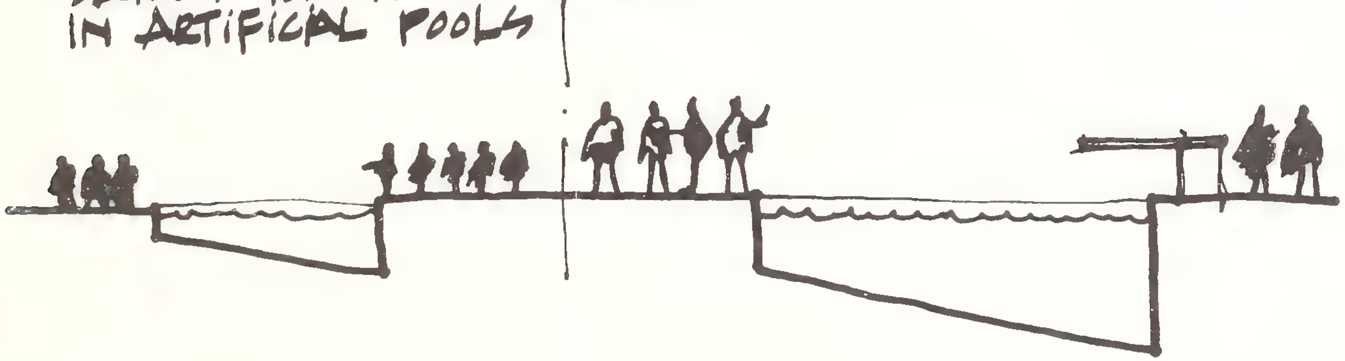
A width of 20' should be sufficient for the wide deck for a community pool. A minimum deck width of 6' is required by the code but 10' is recommended for the deep end. The width of the other two sides varies between 10' and 20' depending on the pool shape.

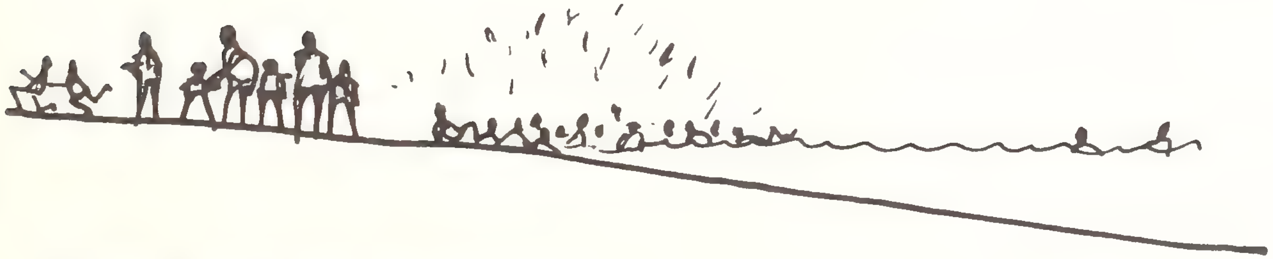
WAVE POOL

CONVENTIONAL SWIMMING POOLS DO NOT OFFER THE SAME FUN AS SEA-BATHING.

WAVE POOL PROVIDES THE SAME PHYSICAL, VISUAL AND ACOUSTICAL ENRICHMENT AS THE OCEAN. IT ALSO PROVIDES THE BEACH HEAD, WHICH IS AN INTERESTING DRY-WET TRANSITIONAL POINT. TOTAL FAMILY PARTICIPATION IS POSSIBLE.

SEGREGATED PARTICIPATION IN ARTIFICAL POOLS





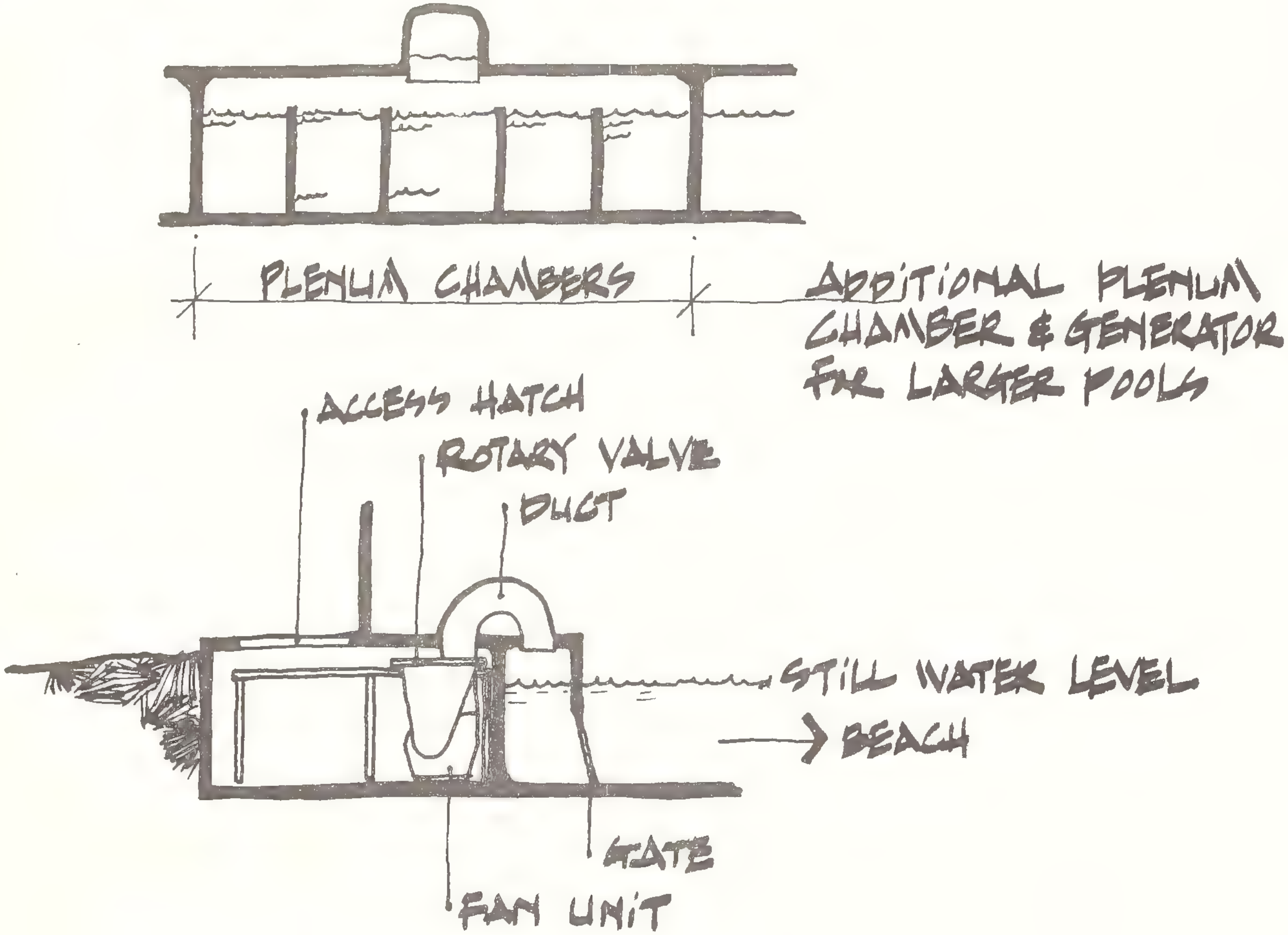
FAMILY PARTICIPATION IN SEA-BATHING

The wave pool is one of the latest developments in the pool industry. Though it has been widely used in Europe and Japan, North Americans are still slow in taking on this innovation. One major reason is the high initial cost. The many wave pools operating (e.g. Point Mallard Park, Decatur, Alabama), however, have reported very high attendance and profits. This is most significant as traditionally the swimming pool is not a profitable facility. It has either to be financed by the government or run by community organizations as an amenity for their members.

Wave pools offer all the fun of sea-bathing without the hazards of undercurrents, uneven depth, contaminents, harmful creatures, and the other unpredictable characteristics of the ocean. People who live in mid-continental regions can enjoy the same pleasures without driving long distances to the seashore.

There is a special aspect to sea-bathing distinct from swimming in an artificial pool. Sea-bathing is for total family participation. The parents and children all swim at the same place rather than in separated areas as in pools. The beach is a more intensely used area than the pool deck. It has been reported by the U.S. Council for National Cooperation in Aquatics that only 3 to 5% of the swimmers at the beach are in the water at any one time, versus 25% for outdoor swimming pools (Swimming Pools, a Guide to Their Planning, Design and Operation, CNCA, 1975). The intermediate area between the beach and the sea - the shallow water area where the waves approach the beach and change to whitecaps, breakers and surf - is the most popular activity area for both the young and old. This is the area where toddlers learn to swim, young children play and splash, and adults stand or lie down to feel the waves wash upon their bodies. The stimulants of all these activities are the waves - their constant movement and sound. A wave pool provides for this very important element which is totally absent from ordinary pools.

The development of wave pools dates back to about 50 years ago. The first wave pools were designed for the spectacular effect of the waves hitting a sea wall on a windy day. The artificial beach area was absent and the waves were purely for visual effects. Before the waves were turned on, an alarm was sounded to warn the swimmers to get out of the water in order not to be carried away into the pool

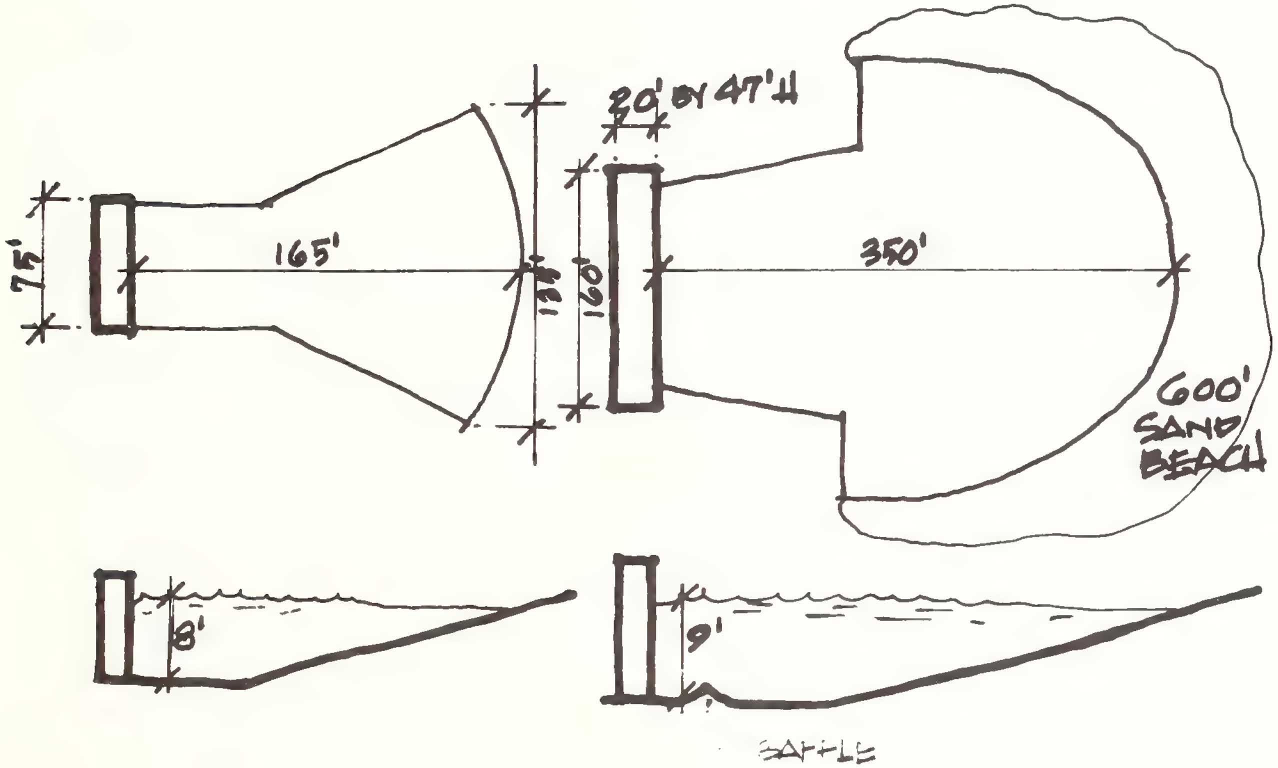


TYPICAL ARRANGEMENT OF WAVE MACHINE AND POOL wall. The machine consisted of paddles or pistons which could also endanger the swimmers.

Nowadays, there are two kinds of wave machines. Most systems generate oscillatory waves which move up and down in a constant undulating motion, producing a random pattern of crests and valleys. The Decatur wave-pool is one that uses this type of wave-making system. It consists of a 165 foot fan-shaped pool with a 135 foot shore-line and a 75 foot deep-end wall which houses the wave-making machinery. Primarily the machinery includes a fan unit and a rotary valve which compresses air through an air-duct to force the water out of the several plenum chambers that span the entire end-wall. This sudden discharge of water is released through underwater openings to create a wave. By alternating the air pressure in these chambers, a series of undulating waves is formed. The amplitude is determined by the still water depth at the generator end. It is suggested that the maximum wave amplitude be equal to 40% of the still water depth at deep end, while the effective amplitude recommended is 0.6 to 1 metre.

POINT MALLARD PARK
DECATUR, ALABAMA

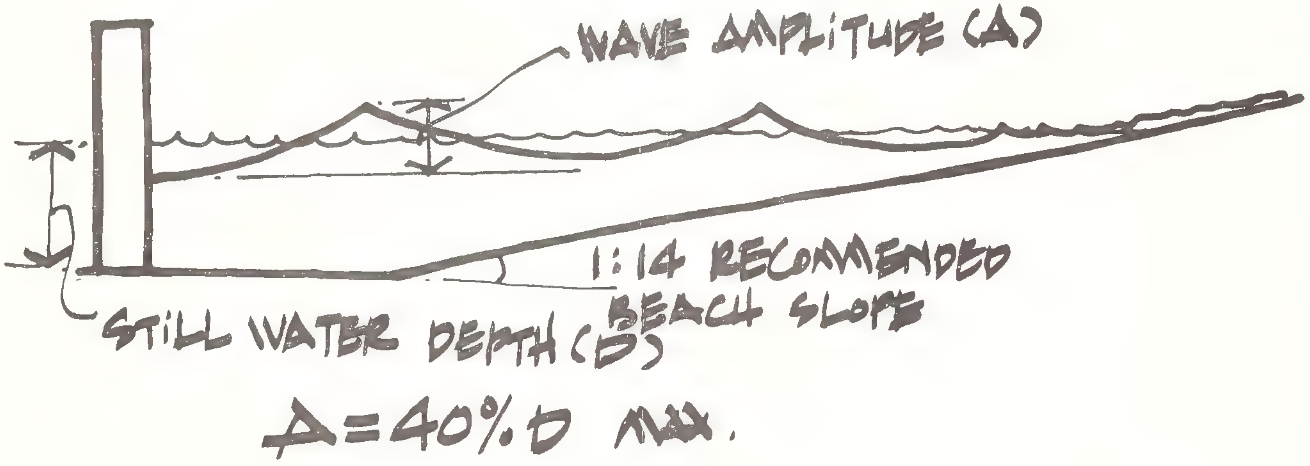
BIG SURF
TEMPE, ARIZONA

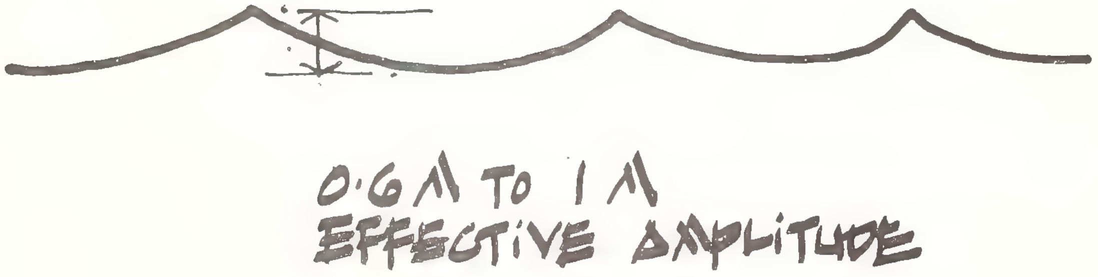


- 749 ACRE PARK
- 16,100 SQ.FT.
- 450,000 GAL.
- $435,000 WAVE POOL (1970) INCL. $100,000 WAVE MACHINERY
- OSCILLATORY WAVE: MOVES UP AND DOWN IN A CONSTANT UNDULATING MOTION

- $2.5 MILLION PROJECT COST
- 20 ACRE RECREATION COMPLEX
- 2½ ACRE MAN-MADE LAGOON
- 4 ACRE SAND BEACH 1' DEEP SAND
- 600' SHORELINE
- RESERVOIR 160'X 20'X 47'H 500,000 GAL.

RELEASES 70,000 GAL. IN 27.3 SEC.
TRANSLATORY WAVE: TRAVELS IN HORIZONTAL DIRECTION ONLY





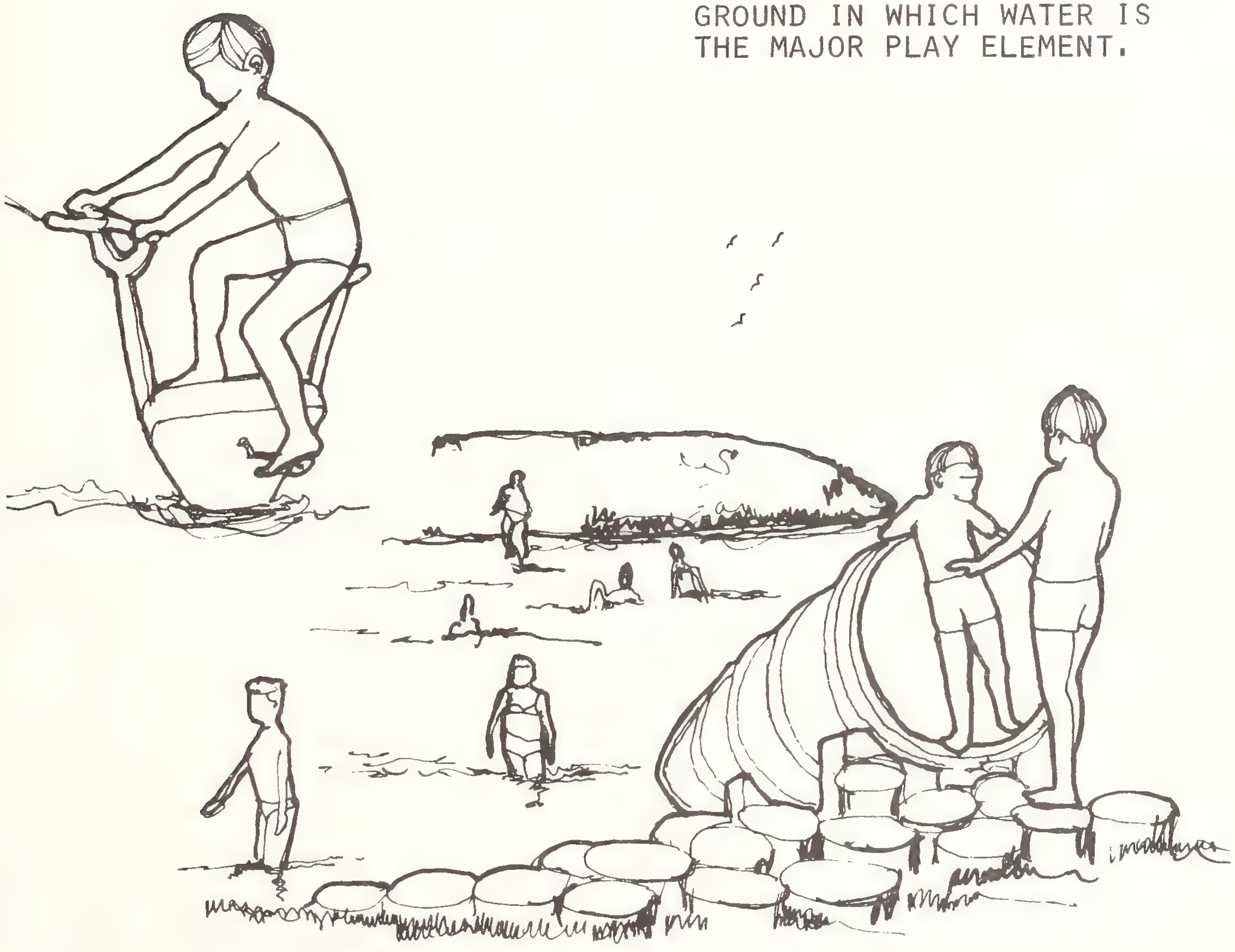
The other kind of wave-making system produces a translatory wave. This is a perfect wave that travels in a horizontal direction only. The wave-generator at Big Surf, Tempe, Arizona is a pump-filled 47 foot high reservoir which provides the hydraulic head for the wave. A gate at the bottom of the reservoir opens every three seconds to release the water. A baffle located right in front of the gate directs the discharged water upwards to form a perfect wave starting at about 75 feet from the reservoir. The surfers catch the wave at this point and ride for 350 feet before the wave stops at the sand beach.

To provide for the wave-machinery in the design, one straight pool wall is required as the wave-wall, although the pool can be of any shape. The waves can even be released from an island. There must always be a beach to absorb the force of the waves and reduce the reflection. It is suggested that the beach slope be not more than 1 in 14 and the beach be extended beyond the still water level to provide for the aforementioned intermediate area. It can either be carpeted, or sand-filled like in Big Surf.

WATER PLAYGROUND

WADING POOLS ARE MEANT TO BE A WATER-PLAY AREA FOR YOUNG CHILDREN BUT MOST JUST TAKE THE SHAPE OF A TROUGH.

DESIGN OF A WADING POOL SHOULD BE APPROACHED AS THE DESIGN OF A WATER PLAYGROUND IN WHICH WATER IS THE MAJOR PLAY ELEMENT.

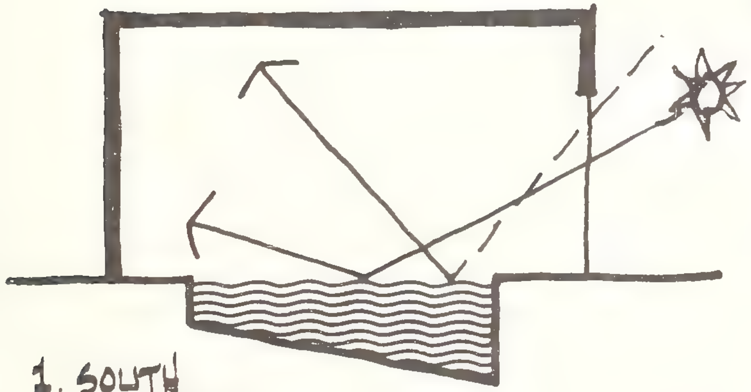


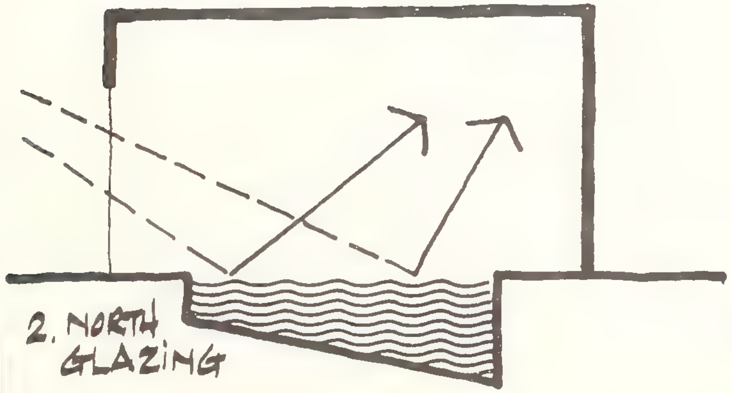
A wading pool is of a low design priority in swimming pool complexes. It is intended to allow small children to splash around in a few inches of water. Although of this purely recreational nature, most wadding pools are of a rigid shape and provide no play equipment at all to enhance the play atmosphere. As a result they are seldom used and sometimes used by older swimmers as a foot-bath.

A proper wadding pool should be designed as a water-playground. Children enjoy playing and splashing in water. At home they can only satisfy such desires in the bathtub or with the lawn-sprinkler. A wading pool is the only legitimate place for them to play with water without adult restrictions. It should be treated more imaginatively and playfully. There is water-play equipment like water canons or water see-saws which find favour among all children. Children should be allowed to bring with them their own rubber or plastic toys so long as they are safe and would not cause any bodily-harm. Eric McMillan's design of the water-play area in the Children's Village in Ontario Place is a water-playground design executed at its best.

FUNCTIONAL WINDOWS

1. SOUTH GLAZING: DIRECT GLARE & SKY GLARE.
2. NORTH GLAZING: SKY GLARE.

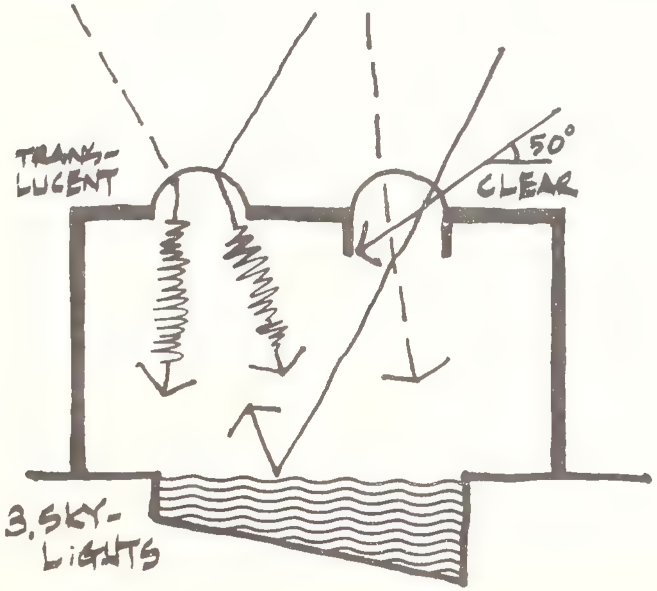

1. SOUTH GLAZING


2. NORTH GLAZING

THE GLAZING AROUND AN INDOOR SWIMMING POOL HALL IS A DESIRABLE YET COMPLICATED ELEMENT.

ANALYZE THE NATURE OF THE FUNCTIONS OF THE GLAZING - VIEW OUT, VIEW IN OR ADEQUACY OF LIGHT. RECREATIONAL POOLS ARE PARTICIPATION-ORIENTED AND DESIRE MORE SUNLIGHT. COMPETITION AND DIVING POOLS SHOULD BE DESIGNED FOR THE SPECTATORS' COMFORT. THE GLARE CONTROL BECOMES CRITICAL.

3. TRANSLUCENT & CLEAR SKYLIGHTS
MAX. CUT-OFF ANGLE 50°.



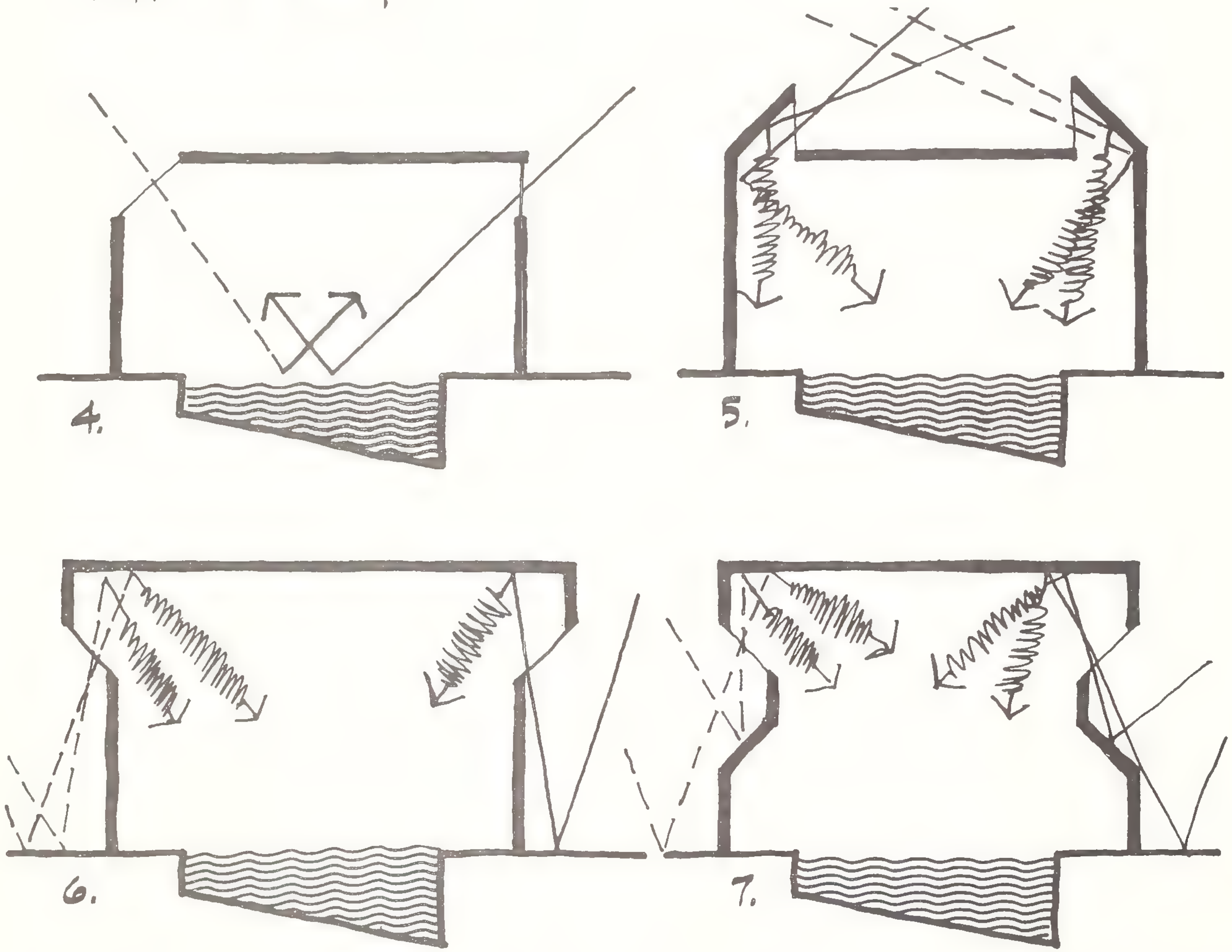
3. SKY-LIGHTS

The use of glazing around an indoor swimming pool maybe a desirable element. It offers the outdoor feeling while swimming under indoor protection. There are, however, associated problems of glare, thermal insulation and condensation. The glare is of course the most serious and neglected problem in modern pool designs. It causes discomfort to the spectators and lifeguards in watching the pool activities. In diving pools glare can be very dangerous as the divers can lose their plane of reference and cause personal injury or collide with other swimmers. One solution to all these problems is simply to exclude glazing from the building altogether and depend on artificial lighting for illumination, but a windowless pool hall may create a feeling of total isolation from the outdoors. The other solution is to orientate the glazing toward the north and east direction so as to avoid the afternoon sun. This does not reduce the glare appreciably as a bright sky can still be reflected by the pool water.

The functions of pool hall glazing can be analyzed as the following:

(1) View Out
* To satisfy a desire for

4. DIRECT CLERESTORY LIGHT PRODUCES REFLECTED GLARE.
5,6,7. REFLECTED CLERESTORY LIGHT PRODUCES A SOFT, DIFFUSED LIGHT.

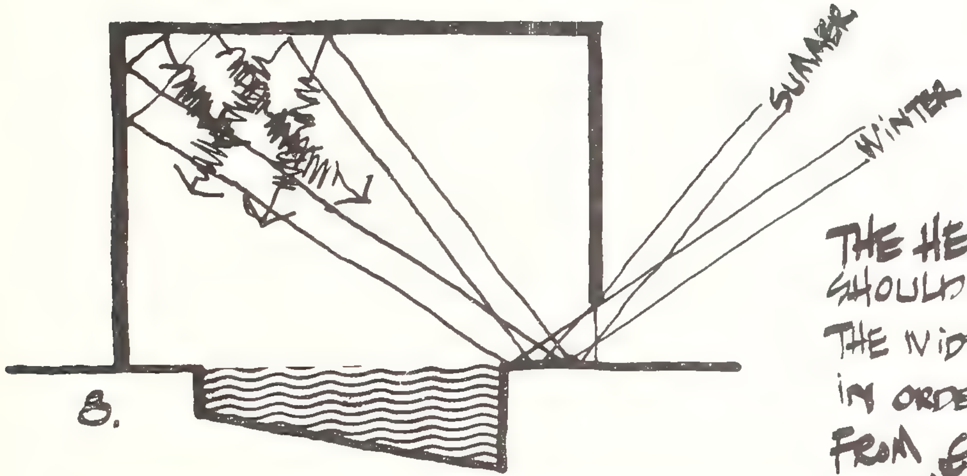


closeness with nature by keeping in contact with outdoors;

* To be informed of the weather;
* To be informed of the time by the day-night cycle.

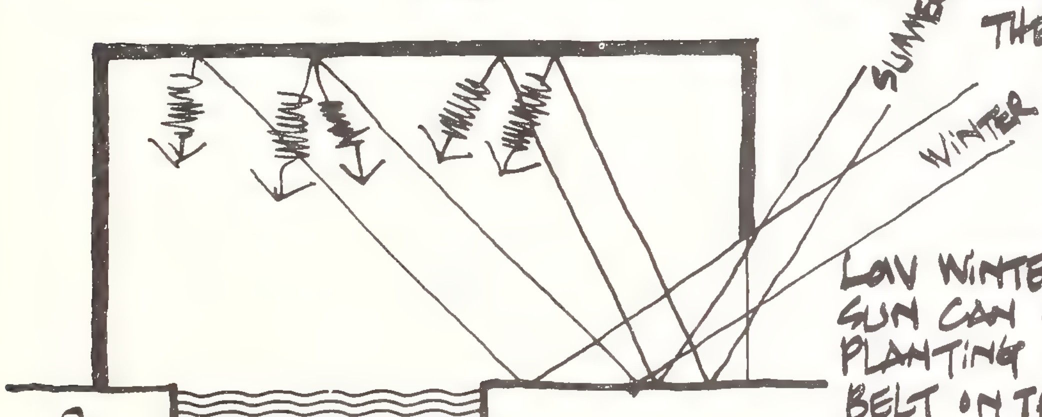
(2) View In

* To express the activity and in turn to stimulate participation: It is generally very frustrating to pass by a stadium in which a competition or performance is taking place and hear the applause and cheering but not see what is going on inside. The sense of curiousity is aroused but cannot be fulfilled. Stadiums have to preserve this visual barrier because the view is their source of income. On the otherhand, a swimming pools' major income is generated from participation. Thus it makes sense that stadiums let you hear the noise, to encourage you to come in and see, and swimming pools let you see the activity to encourage you to participate. (e.g. Robert Crown Centre at Hampshire College in Amherst, Massachusetts; Davis Brody Assoc.)



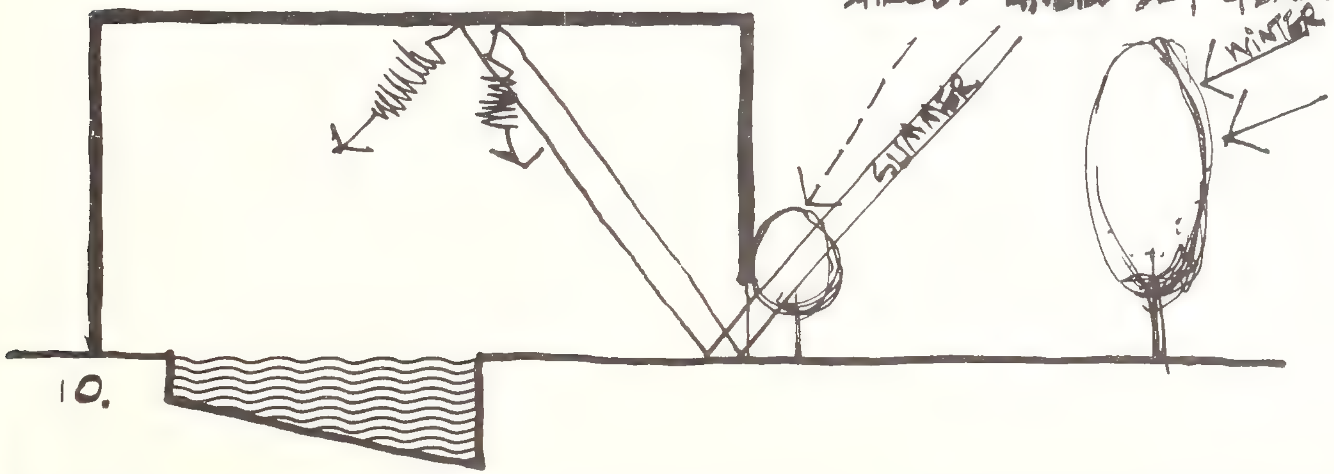
8.

THE HEIGHT OF THE WINDOW SHOULD BE A FUNCTION OF THE WIDTH OF THE POOL DECK IN ORDER TO BLOCK THE SUN FROM CREATING GLARE ON THE WATER.



9.

LOW WINTER AFTERNOON SUN CAN BE BLOCKED BY PLANTING AN EVERGREEN BELT ON THE FAR SIDE OF THE SUNNING COURT. LOW SHRUBS SHIELD SKY GLARE.



10.

* To express the function and character of the building itself: This view is meant to be perceived from a distance, such as from an automobile. Larger glazing - that occupies the whole wall or part of the building - is necessary to fulfill this funtion

(3) Adequacy of Light
This is only a secondary function as better quality, glare-free natural light can be supplied by skylights. Artificial lights and under water lighting also help to fulfill the function.

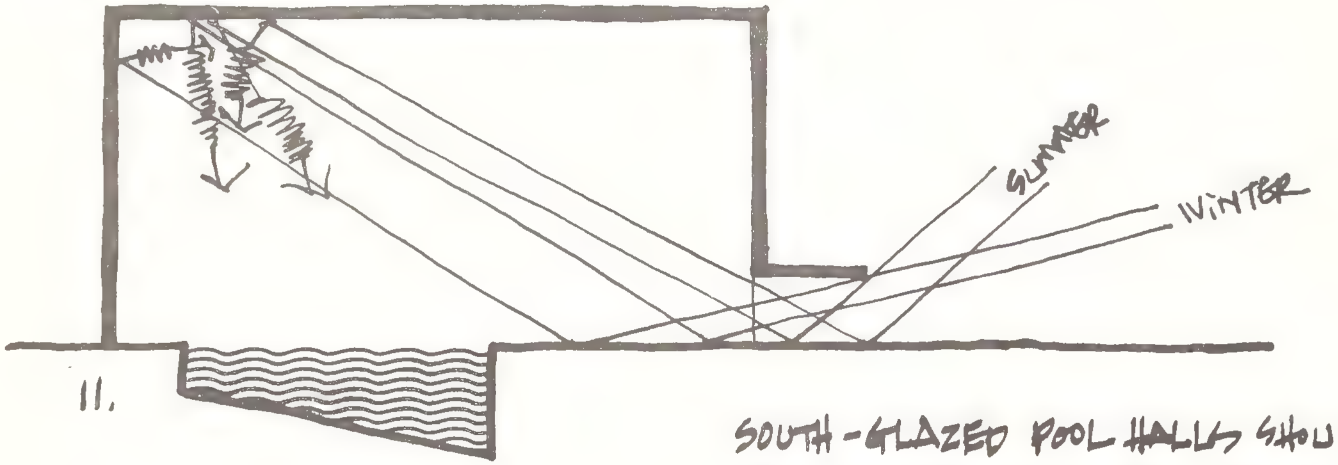
Before designing the glazing, the nature of the pool and the functions the glazing is to perform must be analyzed.

RECREATIONAL POOLS

Recreational pools are designed for total participation in relaxed swimming. Spectator-galleries are not usually provided for. Viewing space is either allocated to supervising parents or to restaurants and snack bars. This kind of relaxed viewing is quite different in nature from the spectator-viewing during gala events. Viewing in recreational pools is only a secondary function. To provide a better environment for the swimmers and to attract more participants is the primary function.

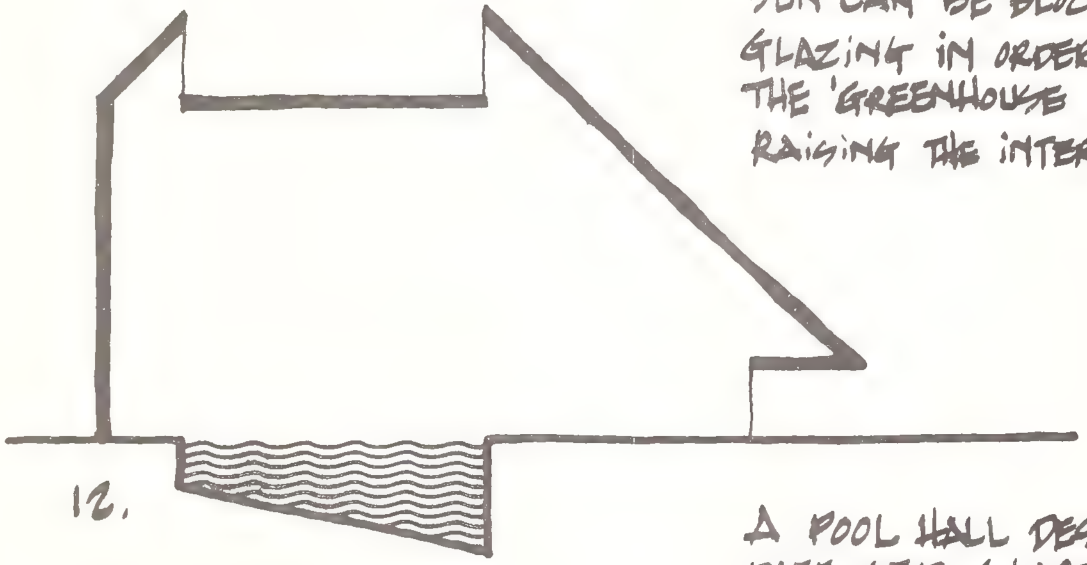
Ample glazing should therefore be designed to soften the indoor-outdoor relationship. Sunlight could even be let in to flood the sunning space and poolside seating areas. The lifeguard station and the parents' viewing area should be oriented with their back to the afternoon sun (noon to 4 pm). The pool side glazing can be in the form of sliding glass doors that are open in summer to an exterior sunning court or lawn area.

The side of the pool hall facing the street may be fully or partly glazed to express both the function of the building and the activities inside. A view of the pool should also be open to the queue outside the admission booth during peak-use periods. This provision eases the impatience and tension of the people waiting to get in. The street-to-pool transition is also smoother in that the swimmers can survey the pool conditions before they pay to get in.



11.

SOUTH-GLAZED POOL HALLS SHOULD BE DESIGNED SUCH THAT THE SUMMER SUN CAN BE BLOCKED OUTSIDE THE GLAZING IN ORDER NOT TO GENERATE THE 'GREENHOUSE EFFECT' THEREBY RAISING THE INTERIOR TEMPERATURE.



12.

A POOL HALL DESIGNED FOR DIFFUSED, GLARE-FREE ILLUMINATION.

COMPETITION AND DIVING POOLS

In competition pools and diving wells, the spectators are given the most design consideration. The pool is the stage and the swimmers are the performers. Lighting should be directed to illuminate the performance and not distract the spectators. Glazing around this type of pool should be minimized and only fulfill the function of view-out and adequacy of light.

Low windows of door height provide view-out but create little glare on the water. The walls surrounding the windows should also be illuminated somehow in order not to create too much dark-light contrast which causes discomfort to the eye.

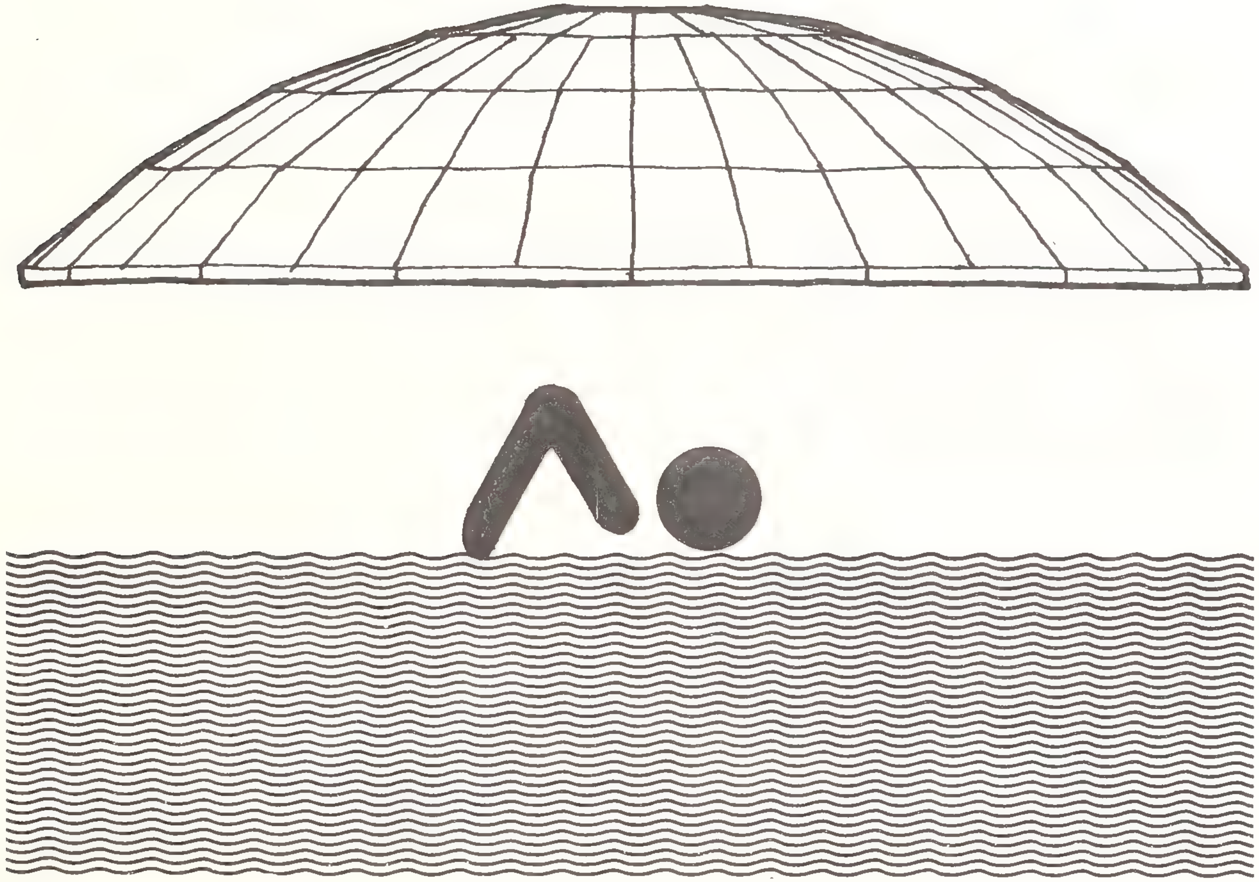
If taller windows are desired, the height should be a function of the width of the adjoining pool deck. South-glazed pool halls should be designed such that the summer sun can be blocked outside the glazing in order not to generate the 'greenhouse effect' thereby raising the interior temperature. The sunbathers can enjoy the sun in the sunning court just outside the pool hall. The winter sun, which is of lower angle, should be allowed in to flood the deck to as far as the pool edge. The deck can therefore accommodate the sunbathers while blocking the sun from creating glare on the water surface. The low winter afternoon sun can be blocked by planting a belt of evergreens on the far side of the sunning court. The evergreens also provide shade for the over-tanned swimmers in summer. Trees and shrubs located outside the pool hall help to shield the pool from the reflection of the sky.

Drapes and louvers provide the most efficient means of stopping glare. Whenever possible, they should be installed along any south glazing to be closed during competitions. In winter, they may be open to let in the sun on sunny days, and closed to avoid heat loss by radiation on overcast days.

SKYLIGHTING INDOOR POOL

PEOPLE ENJOY SWIMMING IN THE SUN.

INSTALL SKYLIGHTS IN INDOOR POOL HALLS TO SOFTEN THE INDOOR-OUTDOOR RELATIONSHIP.



The practice of bathing is usually conceptualized as an indoor activity that began with the advent of civilization, while the immersion of the body in water for pleasure always took place outdoors. Bathing is a personal matter and requires indoor privacy. On the other hand, swimming is the yearning for contact with the natural environment. It is desirable for this to take place out in the open where one can feel the coolness of the water, the sunshine and the breeze.

Until WWII swimming pools constructed were usually outdoors. The sport was merely viewed as a seasonal activity to be enjoyed only in warm weather. After the war there was rapid population and economic growth. Increased spending power, leisure time, as well as popularity in swimming has prompted the construction of indoor pools. Swimming has now become a year-round recreational activity.

The illumination of early post-war indoor pools depended on artificial lighting, often from chandeliers or barebulbs, spotty in coverage and difficult to maintain. Skylights were rarely used and natural light was only introduced through windows that produced unbearable reflected glare. The indoor/outdoor relationship was too strong and contact with nature was minimal (Medina Athletic Club Pool, Chicago).

Human beings enjoy swimming in the sun, being able to feel their presence under the sky. In swimming, the relationship with the ground is lost, and the sky becomes the necessary medium to relate to. Although the pool hall structure is the required physical barrier for protection against the weather, the provision for visual contact with the sky can remedy as the psychological link with nature.

Besides the swimmers, pool halls also serve the spectators, who were given more design consideration after WWII. Indoor pools with no natural light remind them of baths, and stimulate their senses to the dampness, chlorinated air, noise reverberations and the uncomfortable seating.

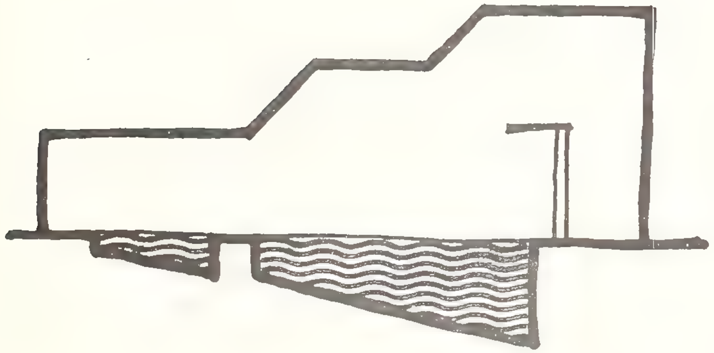
The use of skylights over indoor pools is desired by most people. Either clear or translucent, they admit sunlight to soften the indoor/outdoor relationship. They do not have the same problem with glare as side lights. Tremendous amount of energy may also be saved in illumination as the peak use period of swimming pools is during the day time.

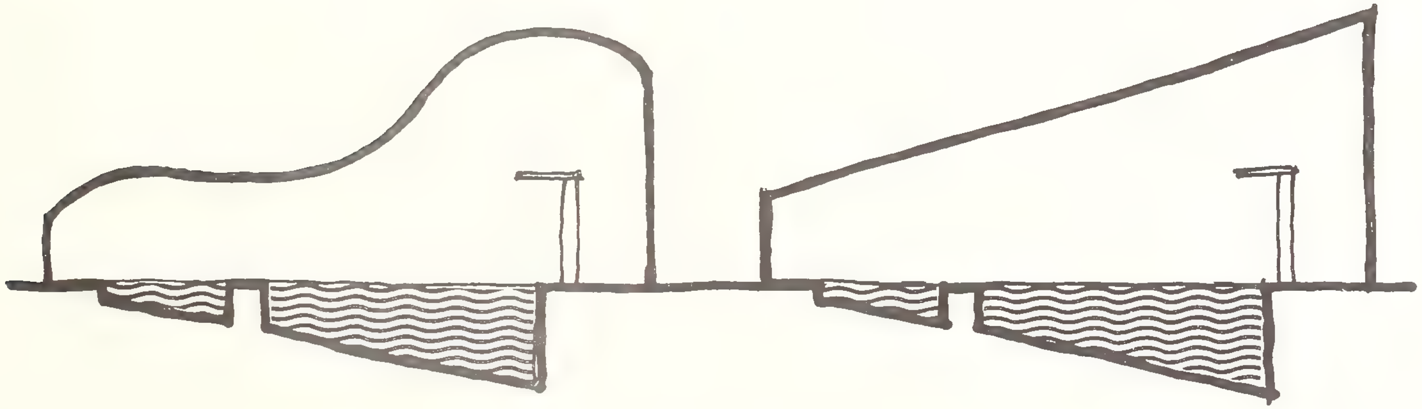
On the other hand, skylighting in indoor pools would affect algae growth in the pool water. Solar rays are only one of the factors important to the growth of algae besides temperature, pH, bacteria, and mineral or chemical content in the water. One of the fastest and easiest control methods is by maintaining a free chlorine residual in the pool at all times. The algae problem, which is more acute in outdoor pools but can be controlled quite effectively, is not a major maintenance problem in most indoor pools. It does not justify the elimination of skylight illumination.

VARIED CEILING HEIGHT

CEILING HEIGHT IN POOL HALLS VARIES WITH THE DIVING BOARD HEADROOM REQUIREMENT.

DROP THE CEILING OVER THE OTHER POOLS TO A COMFORTABLE LEVEL TO SAVE STRUCTURE AND HEATING COSTS.





The ceiling height of a swimming pool hall is governed by the diving board and the headroom it requires. Ontario Health Regulations state that an unobstructed headroom of 10 feet, 10.5 feet and 11 feet are required for 5-metre, 7.5-metre, and 10-metre diving platforms respectively (Ont.Reg. 129/74, s.12). This height is only required for the part of the roof above the diving pool. The ceiling above the main pool and learner pool can be dropped to a lower level.

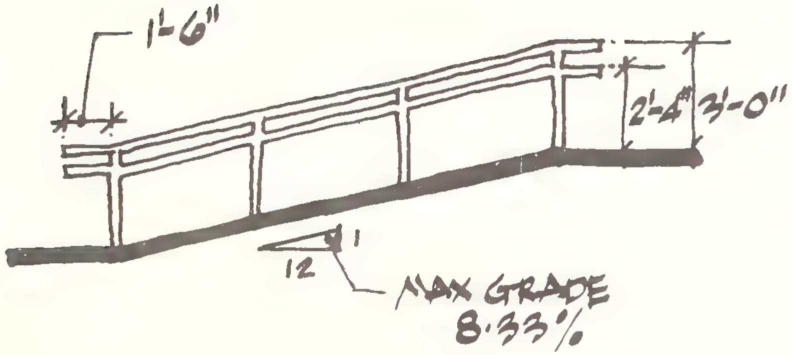
A lower ceiling has the obvious advantage of savings in the cladding and structure costs. Much energy is also saved by not heating the large void in winter. Furthermore, noise reverberation time in the pool area can be reduced. This is a great asset for swimming instructions. A lower ceiling above the learner pool provides a closer overhead plane for swimmers to relate to. The space appears more intimate and less daunting to the children.

The ceiling should not be so low as to make the space appear compressive. It should vary in direct proportion to the pool area. Separate pool halls have the greatest freedom in selecting the best proportioned height to complement the individual spaces.

MINIMUM LEVEL CHANGE

WET STAIRS AND RAMPS ARE DANGEROUS.

KEEP CHANGE OF LEVEL IN WET TRAFFIC ZONE TO A MINIMUM. IF REQUIRED, RAMPS OF GENTLE SLOPE AR PREFERRED TO STAIRS. A MAXIMUM PITCH OF 1 IN 12 (OR 8 1/3% GRADE, 4° 46′) IS SUGGESTED.



Pool-related accidents often occur as a result of slipping on wet stairs or ramps. Change of level should be kept to a minimum in swimming pools, especially in the wet zone. Stairs keep the pool from being used by the elderly and handicapped. Whenever possible, ramps should be used in place of stairs. They should be of 1 in 12 maximum pitch (or 8 1/3% grade, 4°46'), minimum width of 3 feet, no longer than 30 feet between level platforms of 4ft length, and equipped with handrails. Non-slip material should be used on ramps, stairs, and pool deck to give some grip to the foot. Many pools use a steel-brushed concrete finish which is too coarse and easily lacerates swimmers when they fall down. It also harbours dirt and dust and is difficult to clean. Synthetic pool carpeting is safe and versatile; however, its cost, durability, maintenance and associated problems are yet to be solved. Non-slip tiles are so far the safest though an expensive pool finish.

FLEXIBLE DRESSING ROOM

MALE TO FEMALE RATIO IN SWIMMING POOLS VARIES CONSIDERABLY.

PROVIDE FLEXIBILITY IN DRESSING ROOM DESIGN. LAY OUT THE SPACE IN INTERCONNECTED ROOMS EACH WITH AT LEAST TWO DOORS. THE MALE/FEMALE SPACE RATIO CAN BE REGULATED BY LOCKING DIFFERENT DOORS.

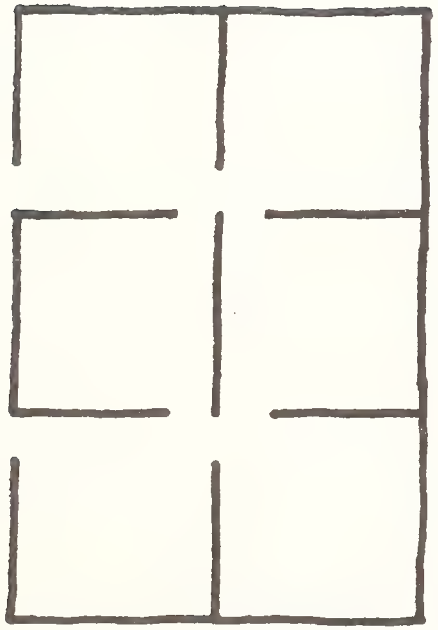
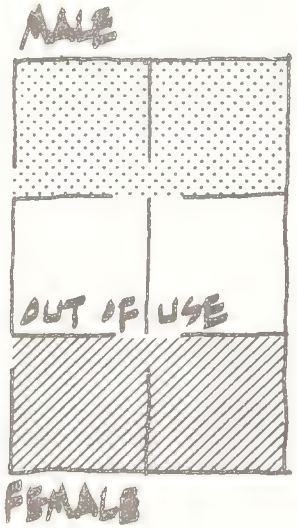


fig. 1

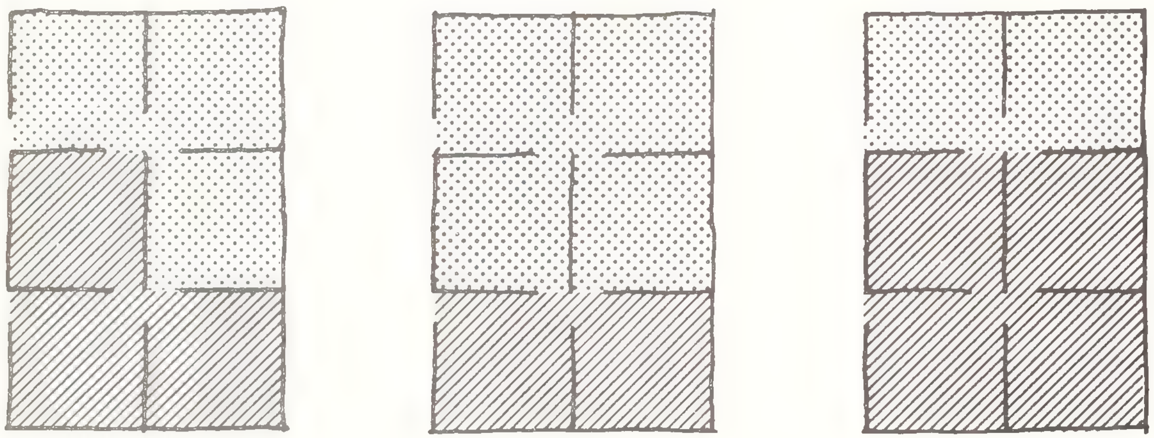
The dressing-room ratio between males and females should be flexible to accomodate varied occupancy situations. It could vary from 1 to 1, 2 to 1, or 3 to 1 and more depending on different activities - public admission, training session, team sport or other related activity.

Most dressing-rooms are designed to accomodate one fixed ratio. In peak periods the male dressing room becomes overcrowded while the female dressing room is underused. This situation also complicates entrance traffic as women wait for men to finish dressing so they can leave together.

Flexible dressing room arrangement can be in the form of interconnected rooms as shown in figure 1. Each room has at least two doors so located as to form a straight through traffic route along the wall rather than cutting through the usable space of the room. The male/female dressing space can be regulated in various ratios by locking different doors. The rooms in the middle can be locked up in underused period to avoid vandalism and maintenance. They can also be reserved for use of swimming clubs, classes or competing teams, who change as a group and then lock up the whole room without wasting time to deposit their clothes in individual lockers or a central storage area. This concept can be expanded further for separated pools which demand separate change facilities. By locating the two pools on opposite ends with the change facilities in the middle, the amount of dressing space can be varied for different needs in different situations (figure 2).



THE MALE/FEMALE DRESSING SPACE CAN BE REGULATED IN VARIOUS RATIOS BY LOCKING DIFFERENT DOORS.



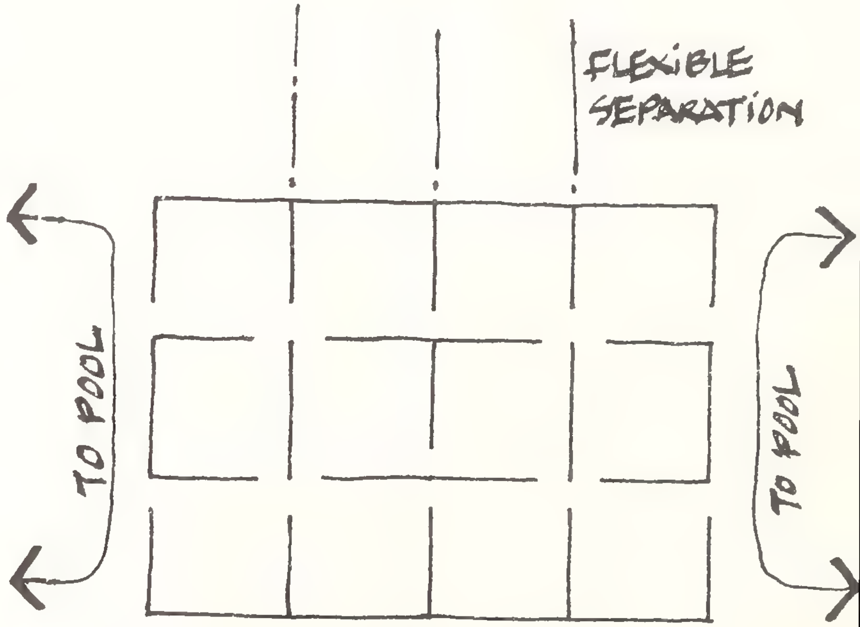


fig. 2

COMFORTABLE PARENTS' VIEWING AREA

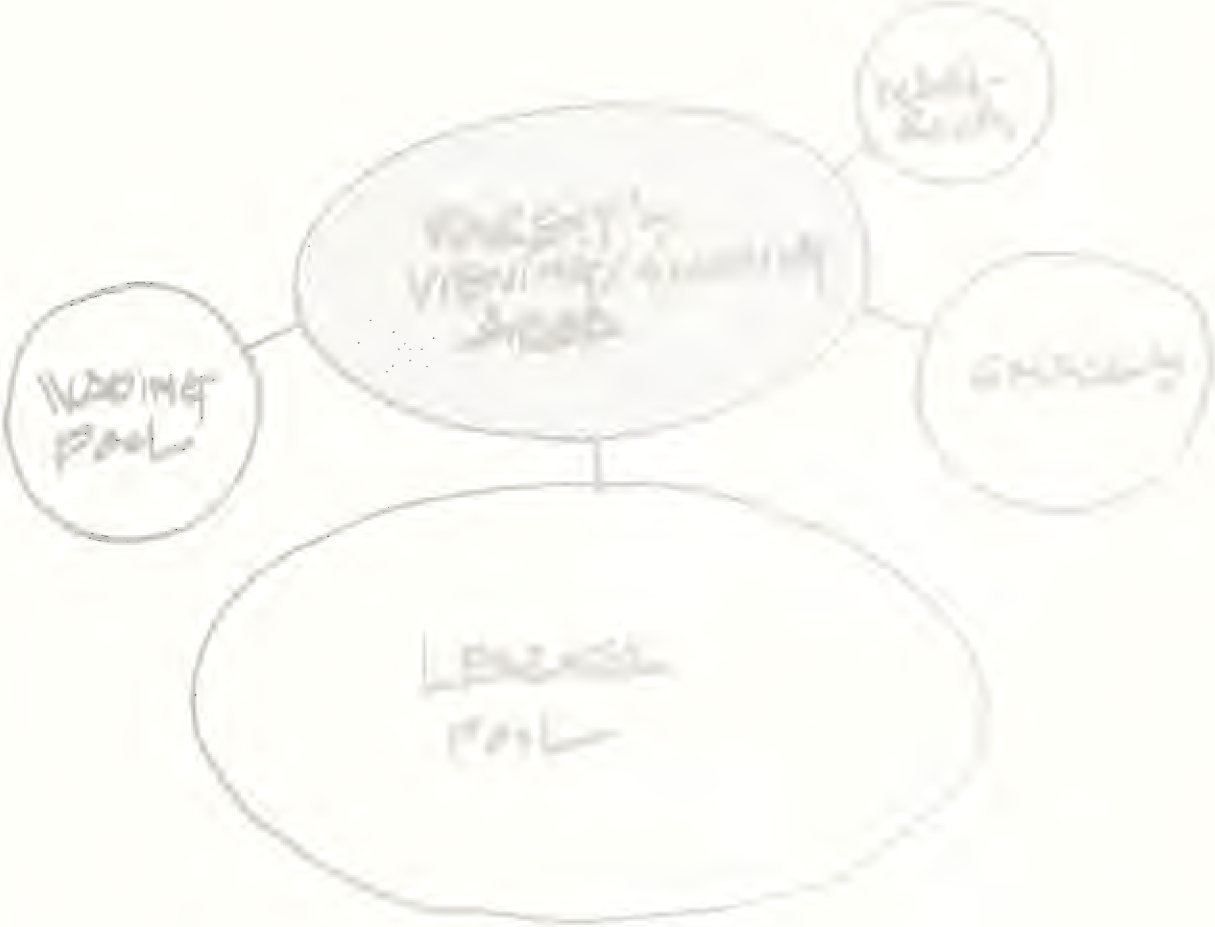
VAST SPECTATOR GALLERIES IN MOST SWIMMING POOLS ARE ONLY USED A FEW TIMES A YEAR.

PARENTS' VIEWING AREAS ARE USED ALL THE TIME. IT SHOULD BE FURNISHED WITH MORE COMFORTABLE SEATS AND OTHER AMENITIES TO MAKE THEIR STAY ENJOYABLE SO THAT THEY DO NOT FEEL IT A DUTY TO BE THERE.

FORMAL SPECTATOR VIEWING vs. CASUAL PARENTS' VIEWING

In swimming pools of a local nature, spectator galleries are hardly necessary as they are only needed for gala events a few times a year. At other times they are rarely used at all. They accumulate dust and garbage and present maintenance problems. Most pools rope off this large wasted space year-round to curb vandalism. On the other hand, there is a large demand for parents' accommodation adjacent to learner pools. This seating area has conventionally been treated like a regular spectator gallery and furnished likewise. Analysis of parents' viewing and spectator viewing shows the difference in their functions. The latter is formal viewing while the former is casual viewing and supervising duty. Vast galleries of seating, concrete bleachers or benches are only suitable for spectator viewing during competitions. More comfortable and informal seating along with other amenities should be provided in the parents' viewing area to make their stay enjoyable.

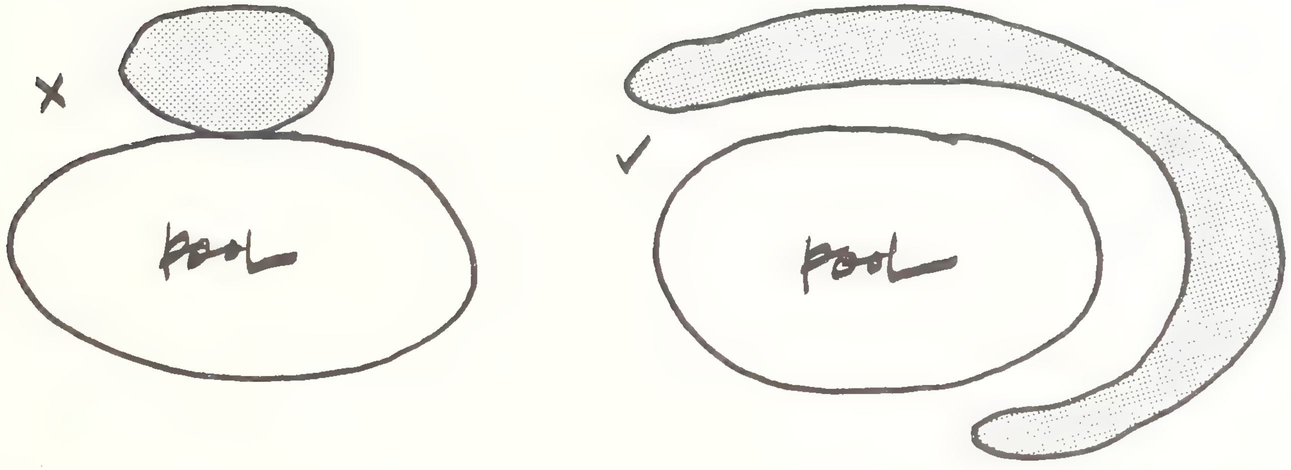
The amenities should cater to the needs of the parents' activities - supervising, viewing, lounging, sunning, socializing, reading and having snacks. An informal, relaxed patio atmosphere could be

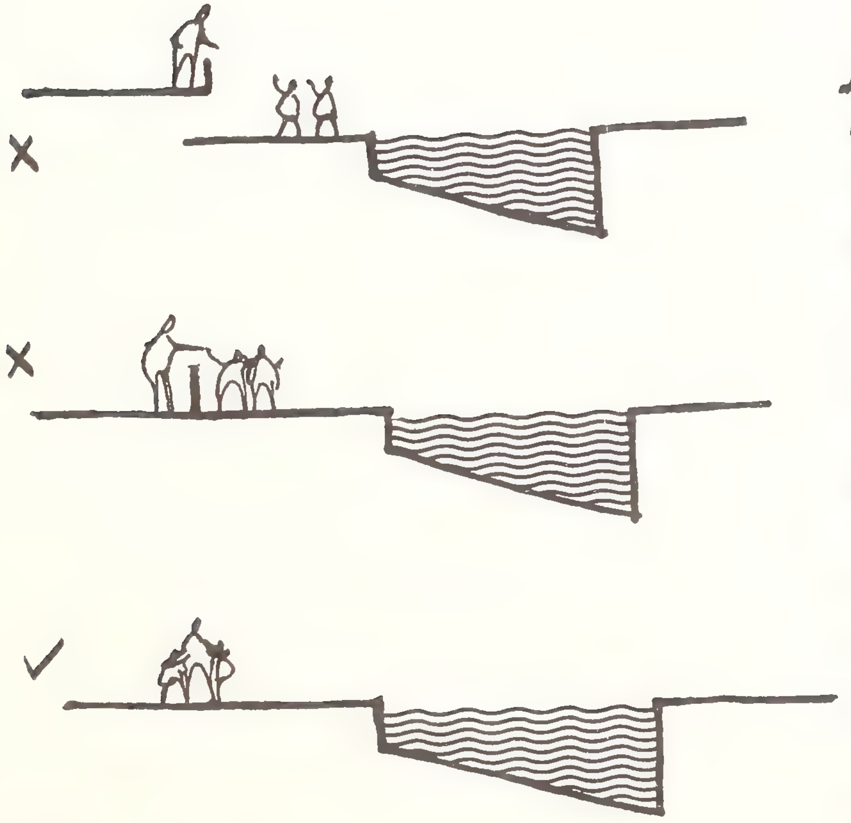


PARENTS' VIEWING AREA SHOULD BE CLOSE TO AMENITIES SO THAT THE PARENTS CAN STAY FOR AN EXTENDED TIME WITHOUT FEELING IT A DUTY TO BE THERE

staged with the pool as backdrop. Comfortable lawn furniture or reclinable deck-chairs are designed for relaxed lounging and sunning. There could also be tables for snacks and low tables for drinks or ashtrays. If located outdoors, the furniture should be heavy enough to withstand the wind and durable enough to stand sun and rain. Orientation of the sight-line from the sun is not as critical as in spectator viewing. Patio umbrellas, tent structures or gazebos provide shade for those who do not desire too much sun. All the furniture should be movable so that it can be arranged at will for each group's requirement. At other times it can be stacked up and stored away so that the space can be used for games, instruction or other activities. Snack facilities and washrooms should be close by to serve this viewing area so that the parents can stay for an extended time and enjoy the sun and the breeze without feeling it a duty to be there.

The other difference between parent and spectator viewing is that the parents desire more than just visual contacts with their youngsters. They want to have constant personal interaction, to give advice or consolation and





ABOVE: VIEWING AREA SHOULD NOT BE A CONCENTRATED POCKET BUT SHOULD BE A STRIP OF SPACE RUNNING ALONG THE POOL SIDE.
BELOW: PARENTS DESIRE MORE THAN VISUAL CONTACTS WITH THE CHILDREN. THEY WANT CONSTANT PERSONAL INTERACTION - ADVISE, CONSOLE, AND HAVE SNACKS TOGETHER.

have snacks together. This requirement can be fulfilled by locating the parents viewing area as close to the pool as possible and not on a higher level. A six foot deck space should be allowed for circulation. If possible, free access should be maintained between the viewing area and pool deck. Health regulations require that where there is a permanent spectator gallery adjacent to the deck, the spectators are forbidden from walking upon the deck within 6 feet of the edge of the pool (Ont. reg. 129/74, S.30). If the furniture in this viewing area is movable and the parents are required to be barefooted, this regulation should not prevent the free access (check with your local health officials for confirmation). The viewing area should not be a concentrated pocket at one end of the pool but, rather, should be a strip of space running along one or two sides of the pool. This arrangement provides an unobstructed view as well as a more intimate setting for the individual family.

SEPARATE SNACK AREAS

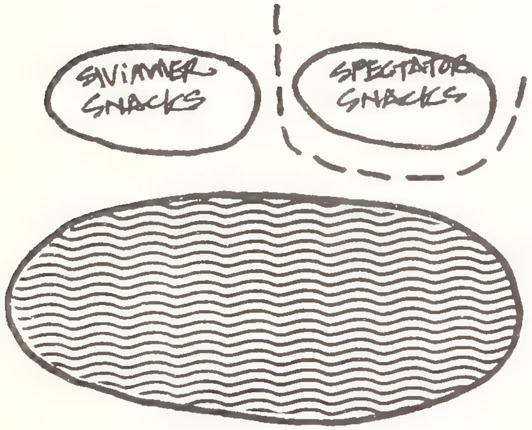
SWIMMERS DESIRE QUICK SERVICE FOR SOFT DRINKS AND LIGHT SNACKS WHILE SPECTATORS PREFER BETTER FOOD AND SERVICE AND A PROLONGED STAY.

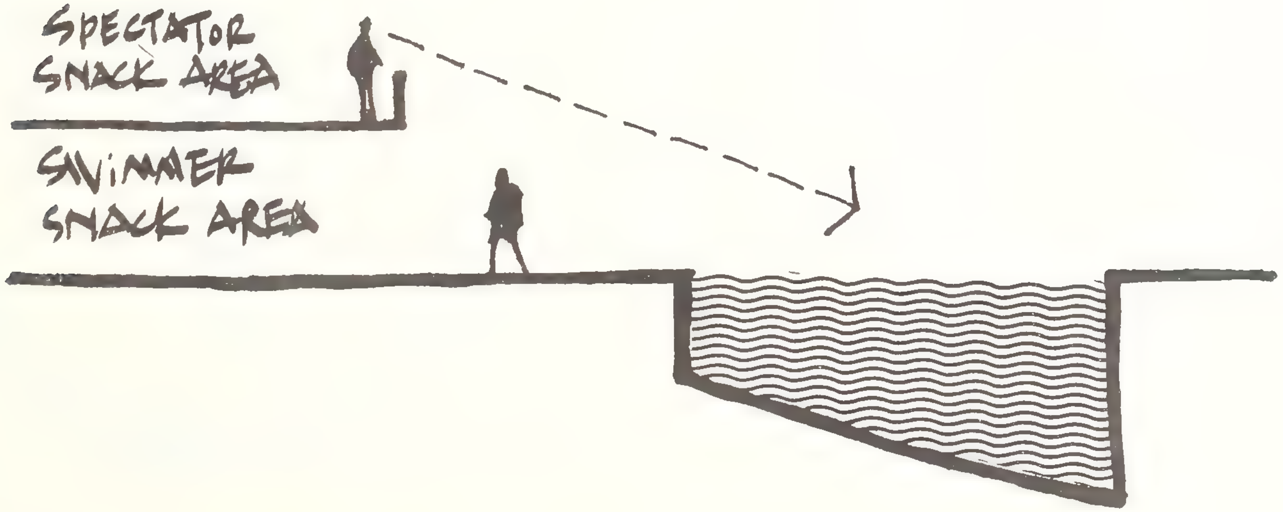
PROVIDE VENDING MACHINES IN POOL DECK AREA TO SERVE THE SWIMMERS AND A RESTAURANT FOR THE SPECTATORS ON A HIGHER LEVEL WITH AN OVERVIEW OF THE POOL.

Snack bars in swimming pools have to serve two kinds of customers - the spectators and the swimmers - who go there for different reasons and different needs.

The greatest difference between the two groups is that the swimmers are wet and have no shoes on. The surrounding should be clean, sanitary and free from any potential safety hazards like glass containers and sharp objects. There should be a compulsory shower at the entrance to the pool deck as well as signs prohibiting food from being consumed beyond the snack bar area. The majority of customers are youngsters who favour soft drinks and light snacks. They go to the snack area mainly for a rest or socialization. It is desirable for them to have a view of the pool activities while eating and resting. A good overview of the whole pool is, however, not necessary.

The other category of patrons are the spectators which consist of casual viewers, parents and friends who do not want to enter the pool area, and swimmers who have just finished swimming and want to get something to eat before they go home. The first observation is that they are dry, fully dressed, and are wearing street shoes.





There is a higher proportion of adults here than in the pool area and the paying patrons are adults most of the time. They generally prefer better food and service than the children. The casual spectators and parents will stay for a longer period of time. Better food and service make their stay more comfortable as well as giving them a legitimate reason to stay. An overview of the pool activities from this area is most important. Viewing is the main motive behind most people coming to use this facility, and should therefore be presented smartly to boost patronage.

From these observations it seems logical to separate the swimmer and spectator snack areas for sanitary reasons as well as different behavioural and functional requirements. Vending machines supply inexpensive and light snacks. They provide fast service, are easy to maintain and are appropriate for swimmer snack needs. Lounge furniture and low tables are desirable for resting and consumption of light snacks. The area should also be located on the same level as the pool deck (see pattern - Minimum Level Change).

The spectator area should be designed with an overview of pool activities in mind. It could be on a higher level to give a wider view angle and better perspective. It could even be designed with the same concepts as in most revolving restaurants by stepping up the platforms to provide unobstructed views.

SHOE AND NO-SHOE ZONES

MIXED SPECTATOR AND SWIMMER TRAFFIC WILL SPREAD INFECTION.

DEFINE A SEPARATION FOR SHOE AND NO-SHOE ZONES.

The demand for separation of spectator and participant zones for sanitary reasons is taken for granted in European swimming pools. The Ontario Health Code does require that a barrier be maintained between permanent spectator galleries and the deck (Ont. Reg 129/74, S.12.1hv), but there is no defined separation of spectator and swimmer circulation routes. What is most appropriate is a definition of the shoe zone and no-shoe zone, which is the idea behind the health regulation stated above. Street shoes should not be worn past the changing room area. Swimmers are to walk through a compulsory shower at the exit to the pool. There should be a separate route for the observers, such as parents, who want to get on the pool deck in casual clothes. Their route would be to check in the shoes in the locker room and go to the pool deck directly. If the snack facility in the pool complex serves both the swimmers and the spectators, there should be a separation between the groups to prevent intermingling of shoe and no-shoe traffic.

PENETRATE POOL HALL SPACE

THE INDOOR SWIMMING POOL IS A VERY PLEASANT SPATIAL ELEMENT.

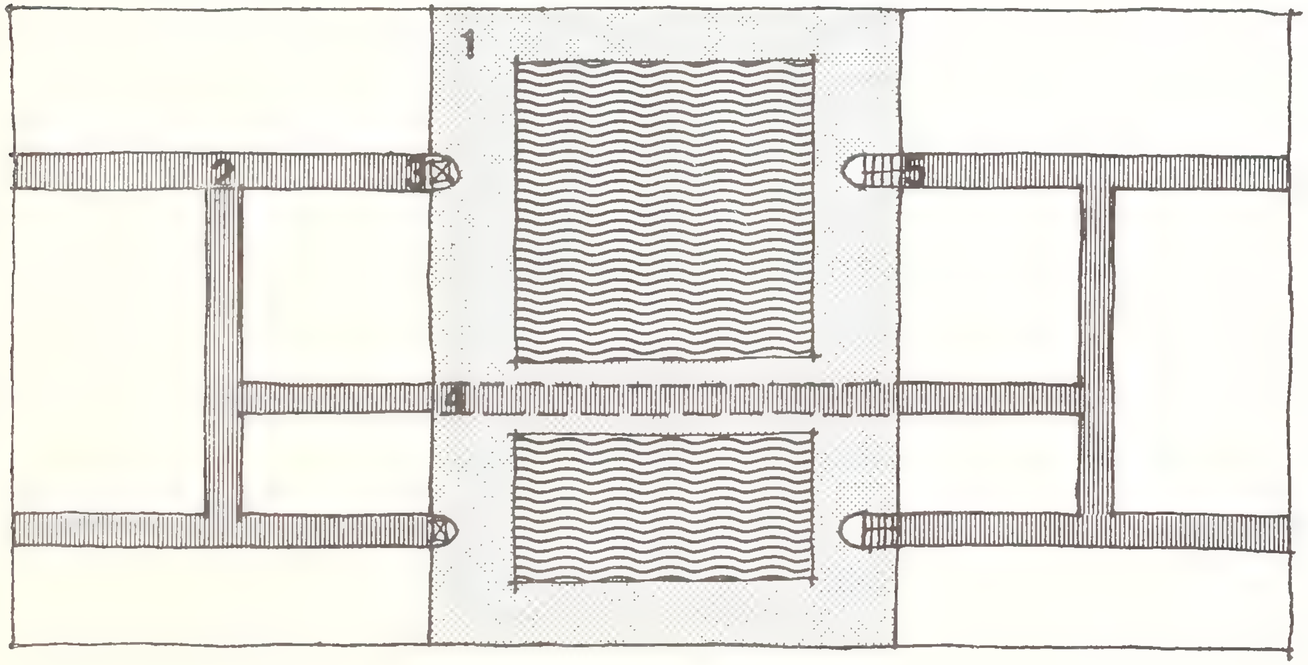
PRESENT IT AS A SHOWCASE FOR THE WHOLE BUILDING COMPLEX. ROUTE THE TRAFFIC NEAR OR THROUGH THIS SPACE SO THAT MORE PEOPLE GET TO SEE IT RATHER THAN THE FEW WHO MANAGE TO GET THERE ON PURPOSE.

Most indoor pools are buried away in the building mass with no indication of their existence whatsoever. Many designs place the pool hall in a location that is totally lockable allowing no chance for intruders to venture near the space, no windows for vandalism, and no sunlight infiltration to limit energy consumption and glare.
The aspect of viewing, which is an equally important form of entertainment as swimming, is neglected by the anonymous location of the pool.

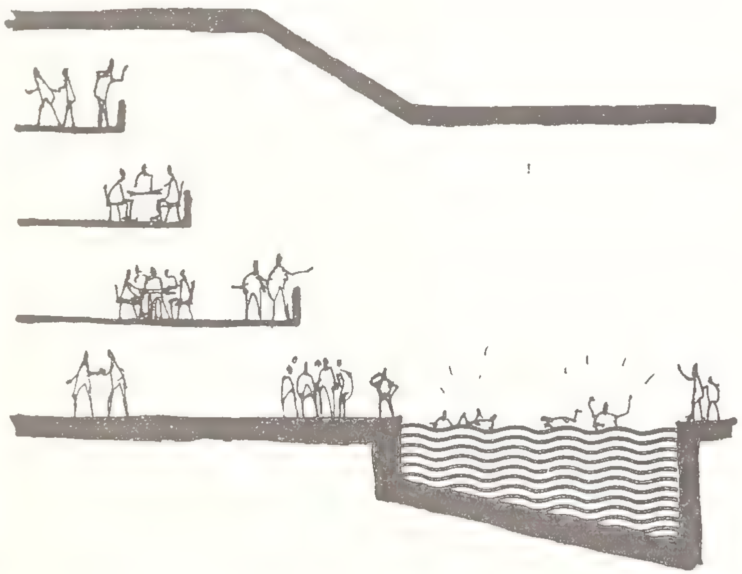
The swimming pool hall is a pleasing spatial element. It generates stimulating sounds and activities of visual interest. It should be placed in a dominant location in the building and its function fully exposed to any passers-by. If executed skillfully, the pool hall can be presented as a focal point for the whole building complex.

The most visible space in the building is right opposite the entrance. If the lobby permits visual penetration into the pool, the aquatic activities become fully visible to the people entering the building. By locating the lobby on a higher level a

1 SWIMMING POOL HALL
2 CIRCULATION
3 ELEVATOR
4 PEDESTRIAN BRIDGE
5 STAIRCASE



OPEN BALCONIES INTO THE POOL HALL



wider overview is presented. Better yet, the lobby space can thrust into the pool hall space like a balcony so that the onlookers feel like they are physically inside the pool hall. The transition from a low lobby space to a tall pool hall space presents exciting vistas (this treatment has been used by John Portman in many of his Regency Hyatt Hotel designs, and is also exemplified at Laval University's Peps Centre in Quebec).

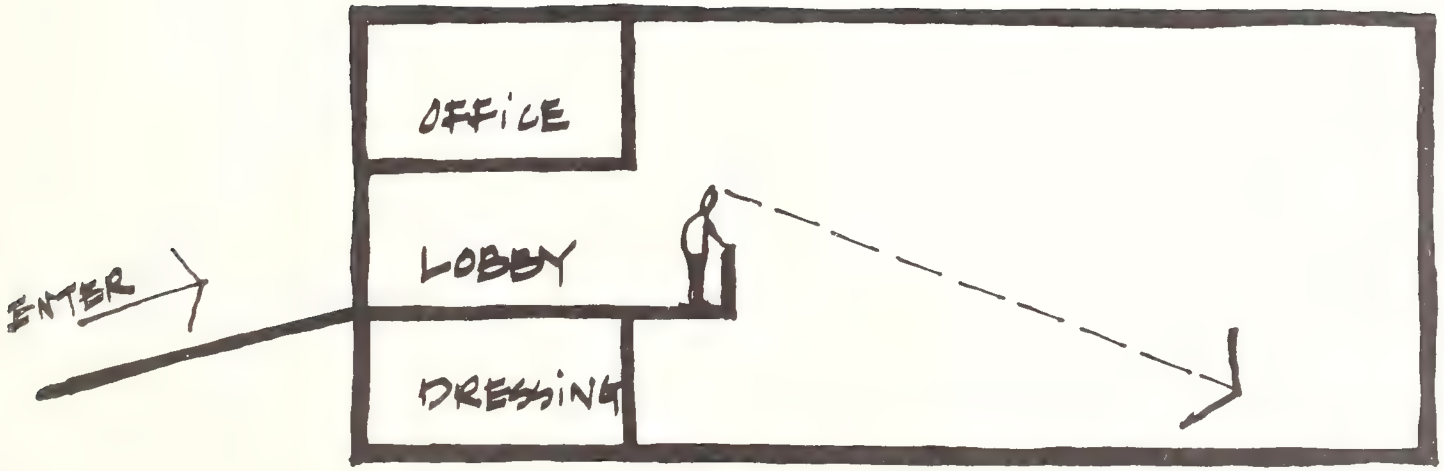
A view of the pool hall could also be open to traffic routes. Higher visibility is thereby attained as more people gain a glimpse of the pool. Vertical circulation routes like staircases and elevators can also be open to the pool hall. Pedestrian bridges can penetrate through the pool hall spanning the void above the pool deck or part of the pool. Circulation along these routes would be an exciting and interesting experience.

Other spaces which can benefit from the view of the pool hall are places where people pause for a while. Ends of corridors or staircase landings can be extended into the pool hall volume in the form of balconies. Lounges and snack areas are other spaces which could also take advantage of the view. This concept of spatial penetration into the pool hall is adaptable to most pools, but is most suitable in situation where the pool is in a joint-use facility or is a component of a large building complex.

LOBBY OVERVIEW

THE LOBBY HAS THE DUTY OF EXPLAINING THE COMPONENTS OF THE BUILDING TO THE VISITORS.

IT SHOULD HAVE AN OVERVIEW OF THE MAJOR SPATIAL ELEMENTS OF THE BUILDING SO THAT THE VISITORS ARE AWARE OF THEIR EXISTENCE AND FUNCTION AS SOON AS THEY ENTER THE BUILDING.

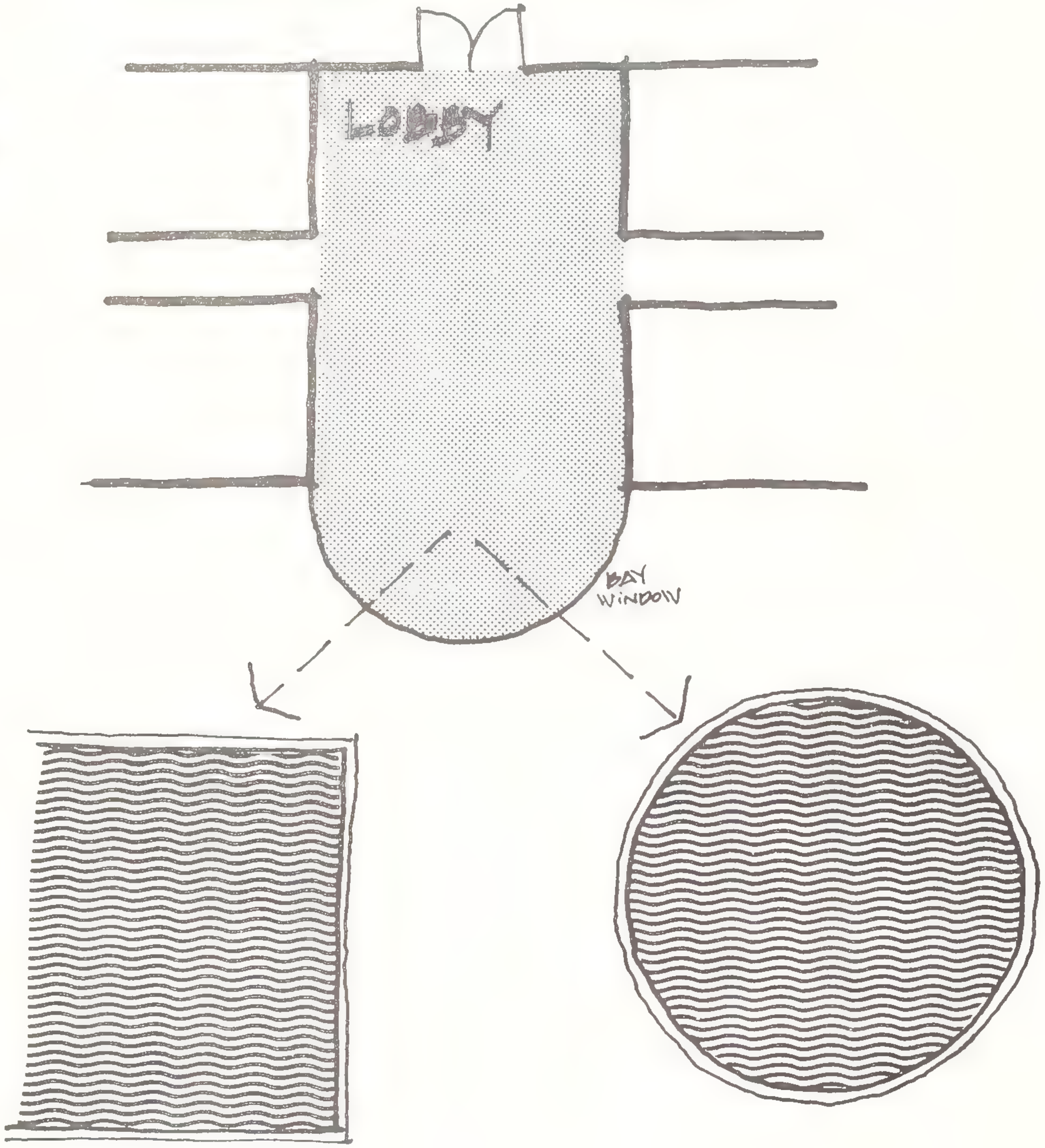


The lobby is the first space in a public building that confronts the visitors. This space should present to them a clear picture of the function, contents and composition of the whole building before they proceed to the individual spaces. This need is pointed out by Alexander:

"A public building deals to a large extent with people who do not know the exact relative locations and internal contents of its various departments. It must be very easy for each person coming into the building to become immediately oriented in it.

Further, the person who is coming to the building may not know the way in which the departments are categorized, or even if he knew what service he needed, he may not know the name given to the service in this particular building. (Thus, what is called "Job Counselling" in one multi-service center, may be called "Urban League" in another, and "Manpower" in yet another.) It must be easy for someone to find what he needs, even if he doesn't know the exact name.

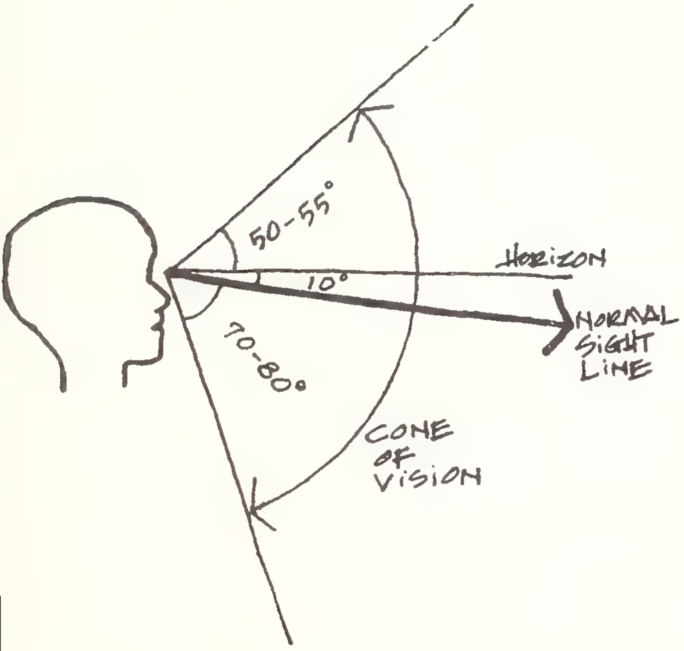
Sometimes, a person is unaware of the existence of a certain service - a service that would be useful to him if he knew about it. Further,



LOBBY OVERVIEW IN SWIMMING POOL HALLS.

even though he will not usually want to use all the available services, he should know them all so that he is confident he is not missing anything he might need. It must be clear to people what all the services available in the building are." (Christopher Alexander, A Pattern Language Which Generates Multi-Service Centres. Center for Environmental Structures, p. 124).

There are several ways to answer these needs. The most common solution is to use directories. They supply the information on the location but do not indicate direction. Maps and signs and even an information desk have to be provided to supplement the directory. In some complex buildings the visitors can easily lose their orientation after a few turns or going through a few doors. The directories also cannot express the functions of the building effectively. Displays and photographs help but are not enough to 'lure' the public to visit the spaces. Electronic means are another alternative used to convey the message. The Imperial Six Cinemas on Yonge Street in downtown Toronto installed TV screens in the lobby airing footage of all six movies showing inside. This is a skilful treatment of



SOURCE: HENRY DREYFUSS, THE MEASURE OF MAN, WHITNEY PUBLICATIONS, N.Y., 1959

visual communication successfully done to stimulate prospective patrons.

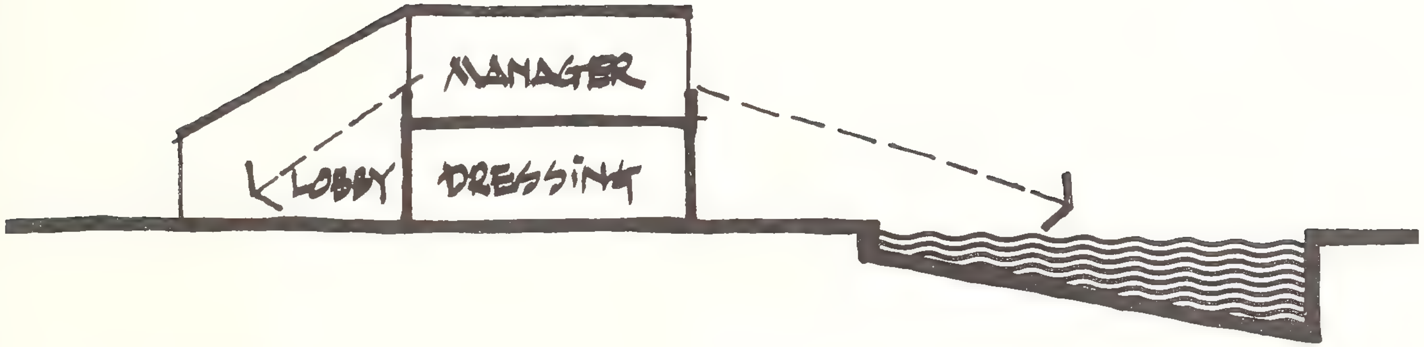
The best way to present the function of a space is to let people see it and the activities taking place inside. This solution is obviously not possible with every individual space in a public building. The major elements can, however, be open to viewing from the lobby space so that peple can notice them once they enter the building, and see clearly how to get there. For buildings with one major spatial element, the lobby should provide direct access to that space such as in churches or libraries. If direct access is not possible as in swimming pools, sub-aqua pools or gymnasiums where visitors need to get changed first, a direct overview of the entire space should be provided at the lobby. This gives the visitors a sense of orientation as well as a chance to survey the space before they use it. First-time visitors to the building will be enlightened and drop-in visitors can be lured to further explore the building.

Man's normal sightline is ten degrees below the horizontal, which accounts for the fact that it is less tiring to look down than to look up. The view of the spatial components of a building should therefore best be perceived from above. Besides, a better perspective of the space can be obtained from above than at eye level. A wider view can also be had by means of bay windows or by extending the lobby into the main space (see pattern - Penetrate Pool Hall Space). Lobbies can thus be located a half level or one level up from the level of the major spaces. Community centres could fan out the components from this point of overview so that they are easily seen. Swimming pools, arenas, gymnasiums or tennis clubhouses can locate the lobby and the spectators on a higher level and the dressing room facilities below. Sub-aqua clubs, on the other hand, may wish to locate the lobby on a lower level to greet the visitors with an underwater window showing the sub-aqua activities.

POOL MANAGER'S OVERVIEW

THE POOL MANAGER IS THE ONE WHO OVERSEES THE POOL OPERATION AT ALL TIMES.

LOCATE HIS OFFICE IN A POSITION WITH OVERVIEWS OF BOTH THE POOL AND THE LOBBY SO THAT HE CAN SUPERVISE THE ENTIRE FACILITY WITHOUT LEAVING HIS OFFICE.



The Manager's office should be located at a convenient point in the pool complex such that he can maintain constant visual contact with the pool activities. A better perspective can be provided by raising his office on a higher level. It should not face the afternoon sun which produces reflected glare on the pool water making supervision difficult. There should be an intercom system so that the manager can be in contact with part of the pool, especially life-guard stations. A microphone addressing system is also needed so that he can make announcements to the swimmers.

On the other hand, the manager should also have an overview of the lobby and the admission booth. His office should be adjacent to the above areas and within easy access of the public. However, people who wish to see the manager should be visually controlled by a general office.

The area of the manager's office may vary from 80 sq.ft. to approximately 150 sq.ft. or more depending on the size of the swimming pool building and the complexity of the manager's job. Generally there should be desks and chairs, file cabinets, storage, and space for small conferences.

SPACE FOR QUEUING

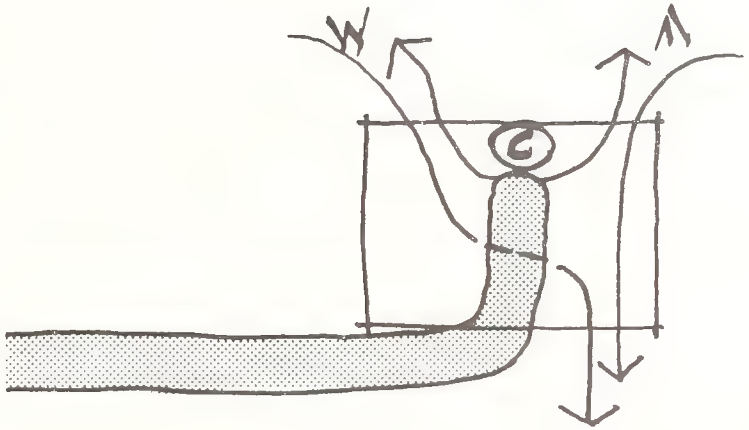
THE ENTRANCE TO A SWIMMING POOL CAN BE VERY CROWDED IN PEAK PERIODS.

PROVIDE A SPACE FOR QUEUING, WITH VIEW OF POOL, SHELTERED FROM SUN AND RAIN, STAIRS TO SIT ON OR RAILINGS TO LEAN AGAINST.

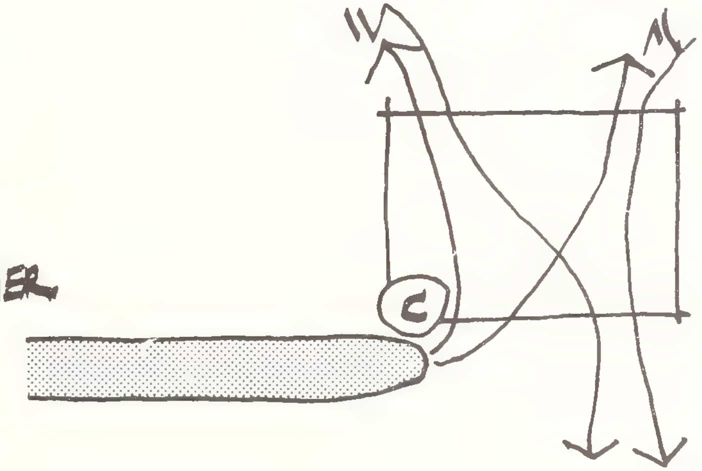
Much attention should be drawn to the design of a pleasant queuing space outside the entrance of pools. This is usually overlooked in most pools. The entrance to a pool complex is most busy during swimming season. There is the incoming traffic - people lined up to get in and people just arrived and inspecting the entrance condition before moving to the end of the queue. The out-going traffic includes people wanting to get out after swimming and people who are ready to leave but who are waiting for rides as well as youngsters hanging around. The queue often gets in the way of the exit traffic. Some form of crowd control is required since the majority of the swimmers are youngsters. Most community pools must economize operating expenses and cannot afford using extra personnel to line up a crowd as in cinemas. Very often the cashier's booth is located deep inside the lobby at the entrance to the dressing rooms. This arrangement brings the queue deep into the lobby as well, thus congesting lobby traffic.

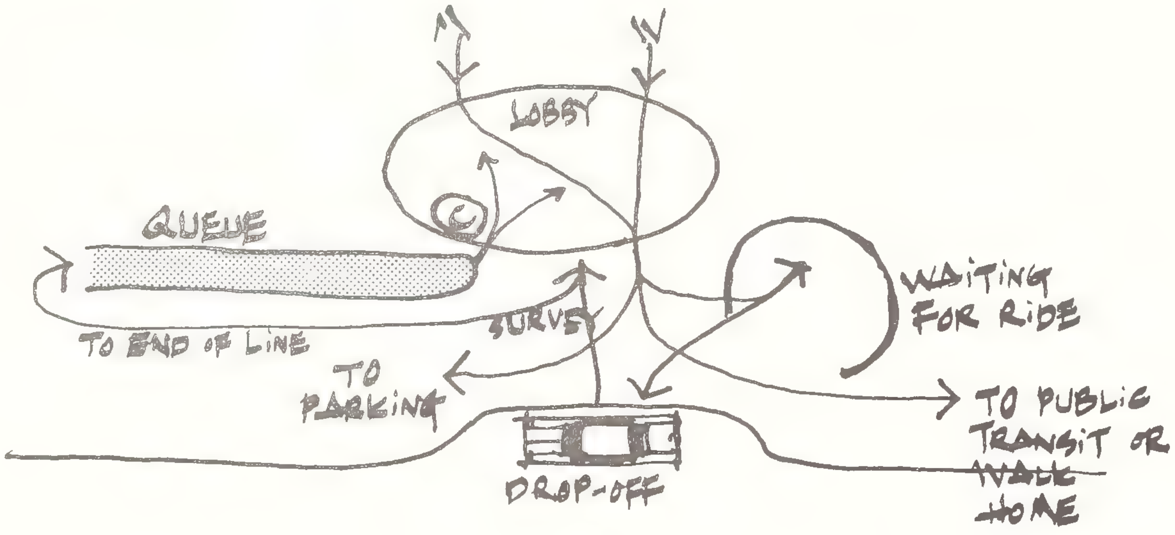
By locating the cashier's booth on the outside edge of the lobby the queue would be out of the way of the exit traffic. The cashier can exercise a certain degree of

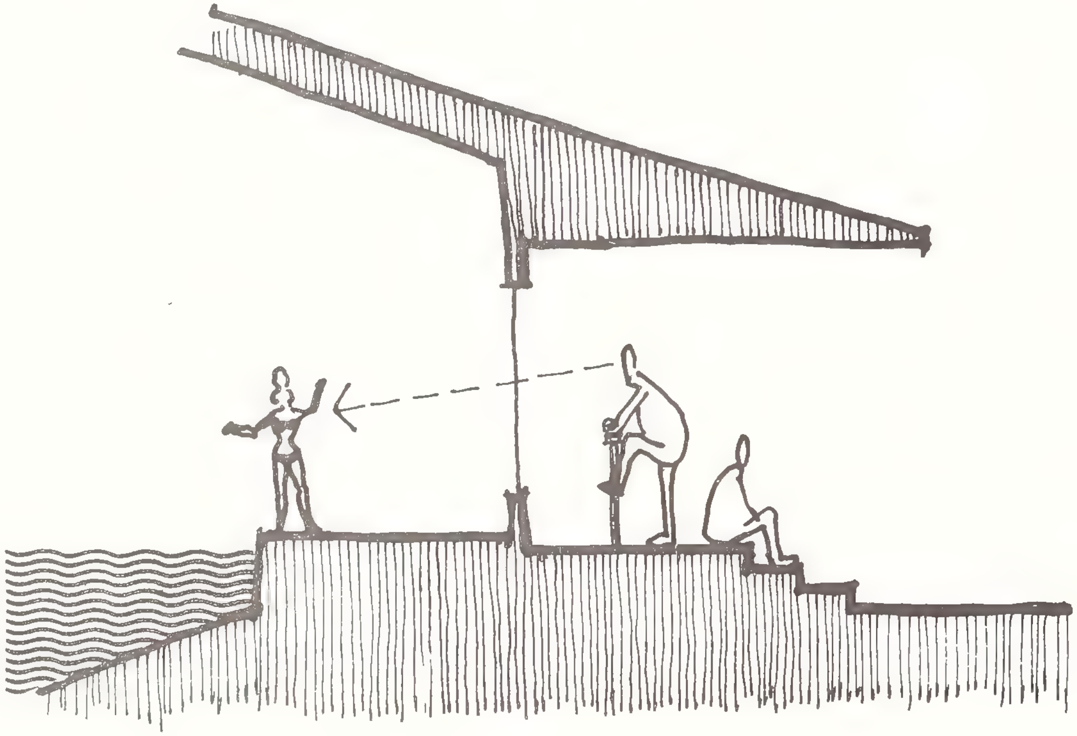
LOCATING THE CASHIER'S BOOTH INSIDE THE LOBBY BRINGS THE QUEUE INSIDE, WHICH OBSTRUCTS EXIT TRAFFIC.



LOCATING THE CASHIER ON THE OUTSIDE EDGE OF THE LOBBY, THE QUEUE IS OUT OF THE WAY OF THE LOBBY TRAFFIC. THE CASHIER CAN EXERCISE VISUAL CONTROL OF THE CROWD.







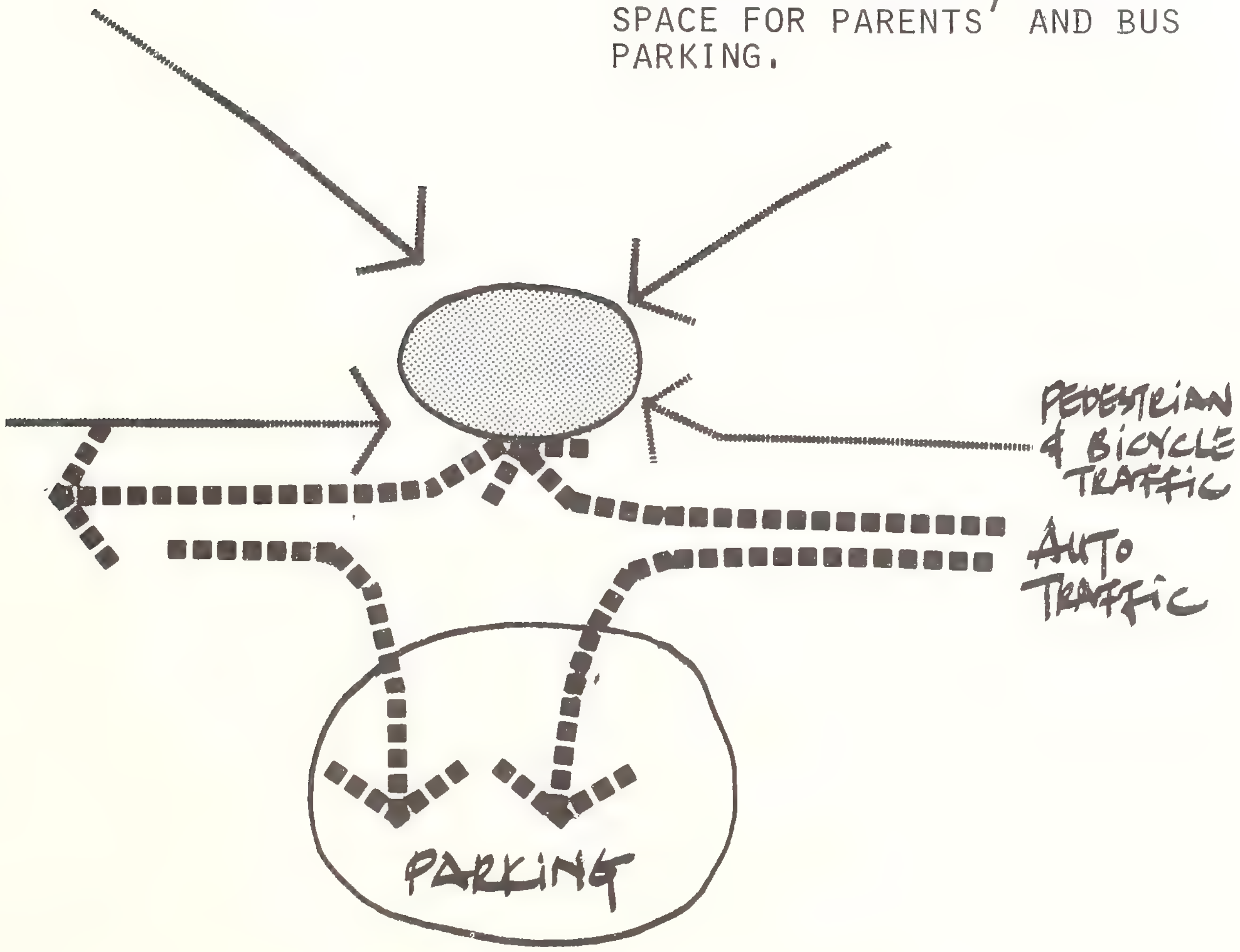
visual control of the crowd as well as be informed of the size of the crowd while supervising lobby activities at the same time. The queue should also not interfere with pedestrian traffic and be canopied to provide shelter from sun and rain. A view of the pool activities from this space is highly desirable (see pattern Functional Windows). There should be a railing to lean on. This would also help induce patrons to line up. Stair-seats running along this space for sitting while waiting are another alternative.

ABOVE: BUSY TRAFFIC AT THE ENTRANCE TO POOLS.
BELOW: QUEUING SPACE SHOULD BE SHELTERED, WITH VIEW OF POOL ACTIVITIES, AND STAIRS TO SIT ON OR RAILINGS TO LEAN AGAINST.

CHILDREN'S ACCESS

GIVE CONSIDERATION TO THE ACCESS BY CHILDREN TO PUBLIC FACILITIES WHICH THEY FREQUENT.

LOCATE THE FACILITY CLOSE TO PUBLIC TRANSIT. PROVIDE PEDESTRIAN PATHS AND BICYCLE ROUTES AWAY FROM AUTO TRAFFIC, BICYCLE RACKS AND CAR DROP-OFF LOOP AT ENTRANCE, AND SUFFICIENT SPACE FOR PARENTS' AND BUS PARKING.

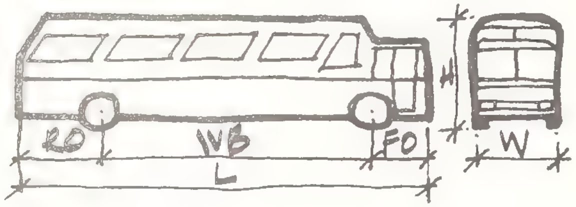


Public facilities which are frequented by children should provide for them when considering access to the building. There are six ways by which the children can get to facilities and respective accomodations for each should be provided:

1. Walk - children in the neighborhood can walk to the facilities, especially in winter when bicycling is not possible. There is a need to provide pedestrian routes to the building from the direction of the target community, e.g., nearby schools or playgrounds. At the entrance, the pedestrian routes should be separated from auto traffic.

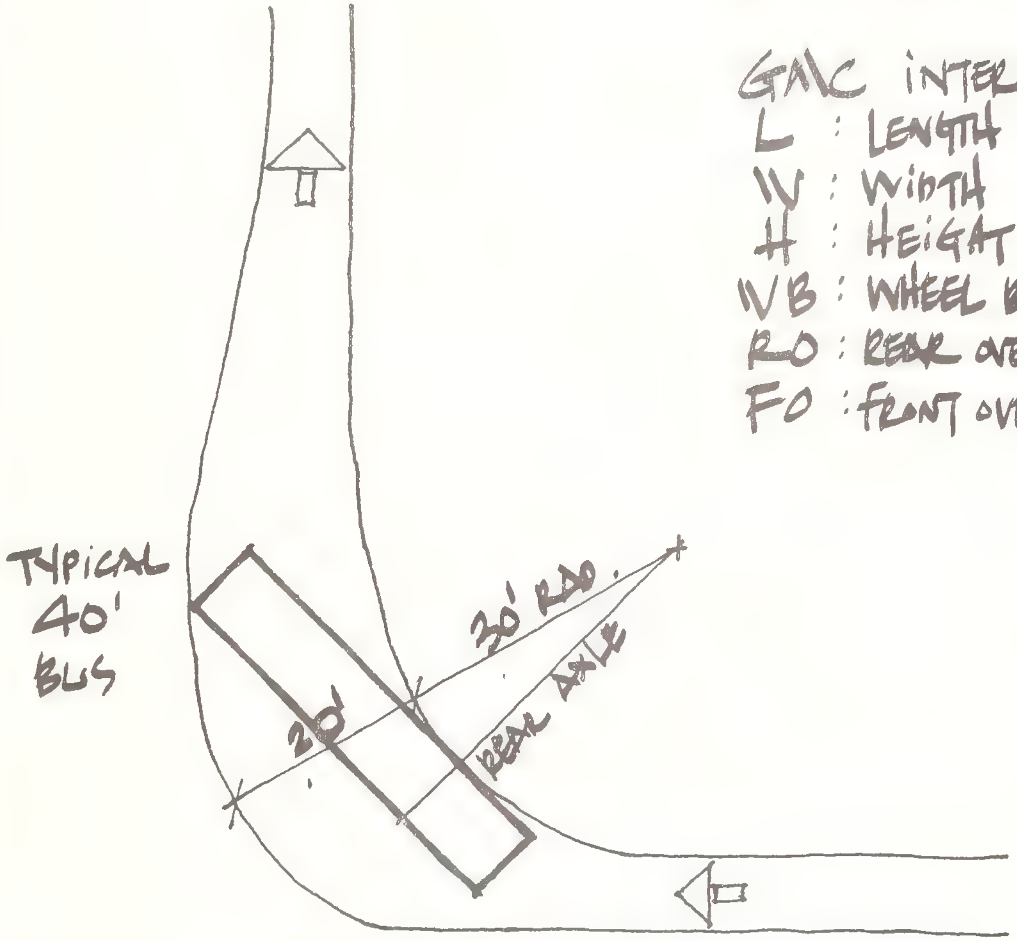
2. Bicycling - bicycle routes should be provided off auto traffic routes. Ample bicycle racks should be installed at the entrance off pedestrian circulation routes.

3. Car drop-off - a drop-off loop should be provided adjacent to the entrance for the drop-off and pick-up of the children. This loop should be free of parking, and be long enough for four or five cars to line up at a time. It should also be



GMC INTERCITY COACH

L	LENGTH	40'-0"
W	WIDTH	8'-0"
H	HEIGHT	10'-11"
WB	WHEEL BASE	26'-6"
RO	REAR OVERHANG	8'-0"
FO	FRONT OVERHANG	5'-6"



SWEEP PATH FOR 40' BUS 90° TURN
(SOURCE: TIMESAVER STANDARDS FOR BUILDING TYPES
DE CHIARA & CALLENDER, McGRAW-HILL, 1973, p.828)

canopied for shelter from sun and rain.

4. Car - parents who bring their children in cars will need parking space close to the building. (see pattern Swimmer Parking).

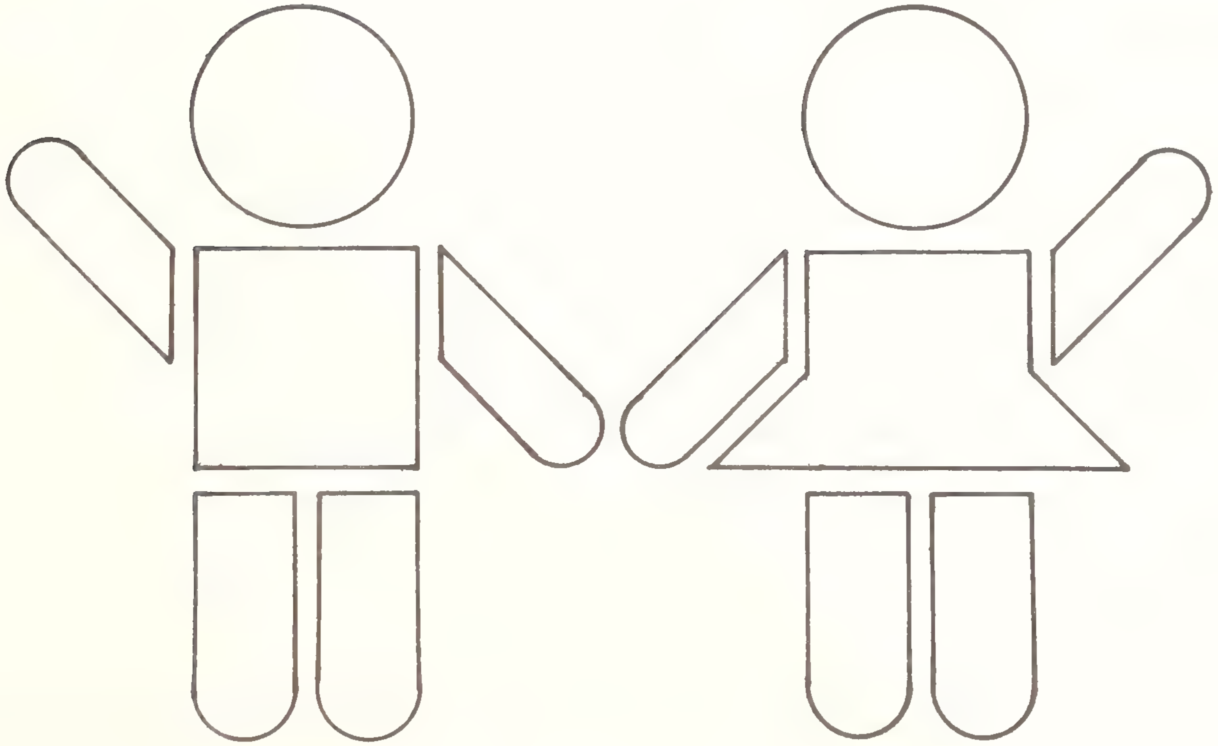
5. Public transit - the facilities should be located close to bus stops or other public transport stations to permit the children to utilize public transit to get to the building.

6. Chartered bus - school children or community children's groups are sometimes transported to the facilities by school buses or chartered coaches. The buses will need parking space in the parking lot. Sufficient room for turning should also be planned to accomodate these vehicles in the parking lot layout.

CHILD-HEIGHT FACILITIES

GIVE CONSIDERATION TO THE ACCOMMODATION OF CHILDREN IN PUBLIC FACILITIES WHICH THEY FREQUENT.

FURNISH THE FACILITIES AT A SCALE USABLE BY BOTH ADULTS AND CHILDREN. PROVIDE LOW DRINKING FOUNTAINS, TELEPHONES, MIRRORS, SINKS AND PAPER TOWEL DISPENSERS; OR PROVIDE STEPS FOR THE CHILDREN TO CLIMB UP TO REACH THE FIXTURES.

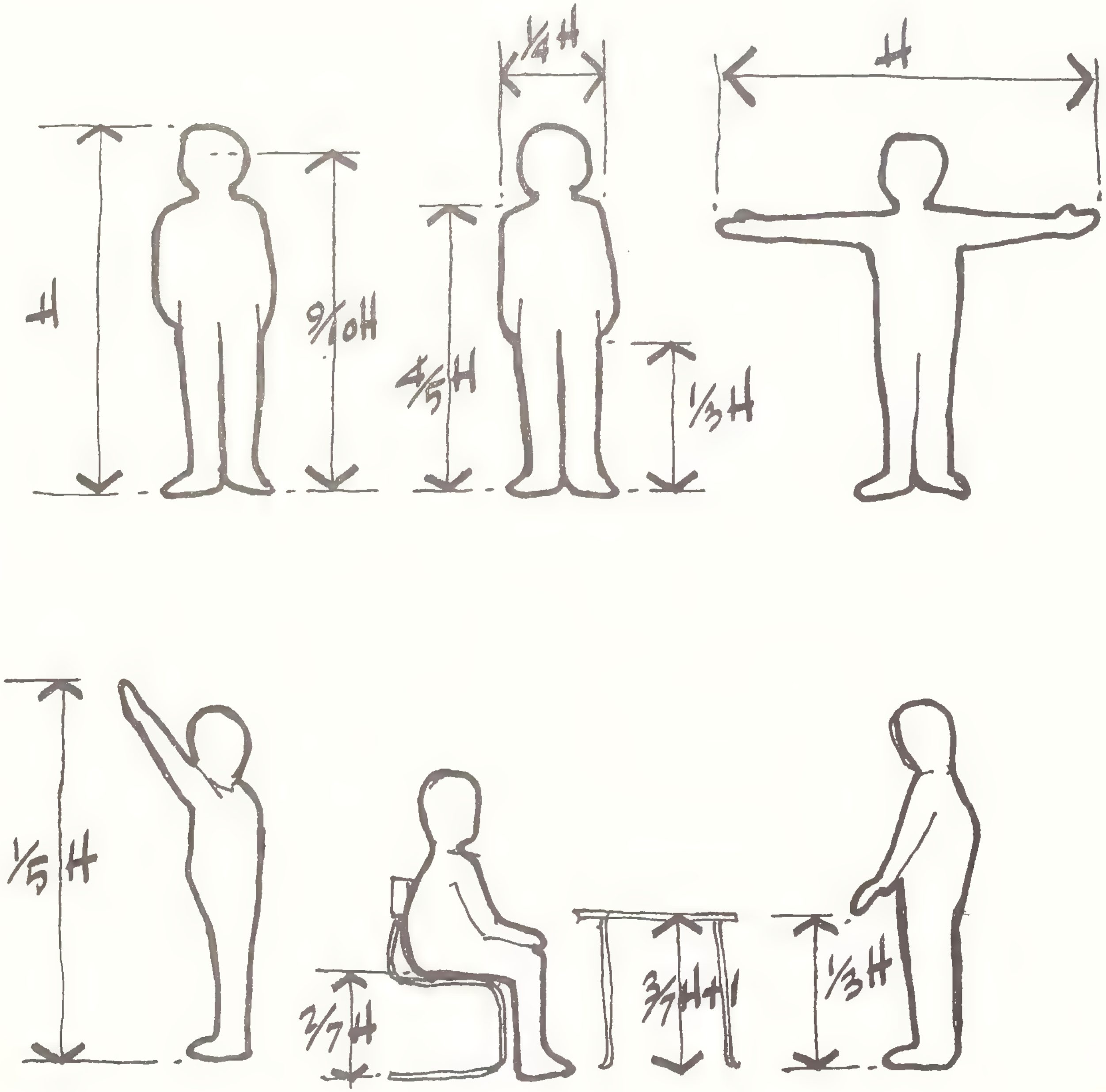


Accommodation for children is not always provided for in most public facilities. Children must adapt to an adult scale. This is acceptable in most situations (seating, doors, or staircases). It does not make sense to provide a child-scale staircase by the side of a regular staircase, or have separate children's and adults' entrances to the same building. Besides, children will grow up and they have to learn to adjust to the world of adults.

There are certain spatial elements that are essential to children which when installed at an adult-height are inaccessible to children. The need for adjustment of these elements becomes more apparent at places where children constitute a large proportion of the patrons. Wheelchair users will appreciate this consideration from which they also benefit.

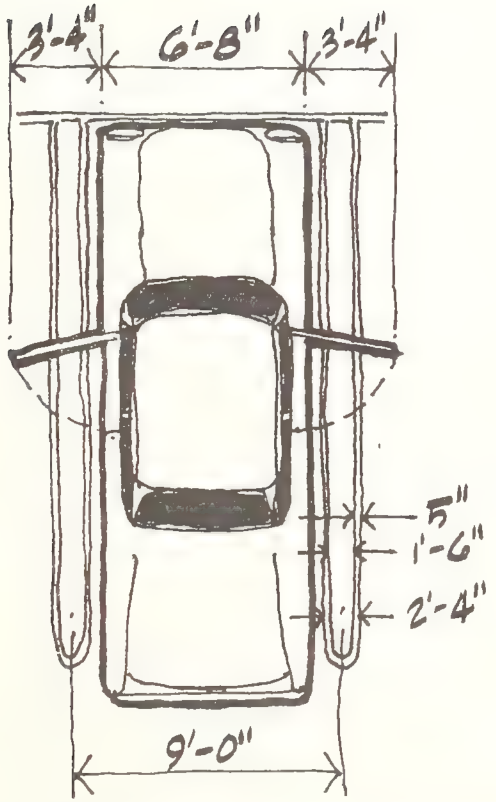
In a swimming pool complex, the learner pool is used mostly by children. The recessed steps on the pool side or the staircase at the shallow end are not usually at child-scale. Children often encounter difficulties climbing out of the pool by themselves. They are also apt to stumble on the stairs in the water. The installation of a ramp at the shallow end to permit children as well as the infirm to have less difficulty while entering or leaving the water is an important consideration. A gradient of 1 in 12 maximum is recommended (see pattern Minimum Level Change).

In public washrooms children encounter similar inconvenience with lavatories, mirrors, and paper towel dispensers mounted above their reach. As well, wall-mounted urinals are out of reach for young children. Floor-mounted urinals are more desirable as they can be used by both adults and children. Likewise, drinking fountains could be lowered to a 33" nozzle height or a set of steps could be provided to enable the children to use the adult-height fountains. Foot pedals and hand-operated knobs or buttons are sometimes too difficult for the children. Hand levers are preferred.



PHYSICAL PROPORTIONS OF CHILDREN
(SOURCE: *TIMESAVER STANDARDS FOR ARCHITECTURAL DESIGN DATA*)

SWIMMER PARKING



(SOURCE: TIMESAVER STANDARDS FOR BUILDING TYPES)

PARKING PROVISION IS DUE TO A SET OF SOCIAL, ECONOMICAL, GEOGRAPHICAL, CULTURAL FACTORS, ETC., WHICH ARE UNIQUE TO EACH SITE.

FULL PARKING DEMAND OCCURS ONLY A FEW TIMES A YEAR AND SHOULD NOT BE PROVIDED FOR. ASSUME A 76% STAFF AND 19% VISITOR PARKING CAPACITY AND DO NOT ALLOCATE STAFF-ONLY PARKING SPACES.

It is difficult to set a rule on the amount of parking space for swimmers. The socio-economic conditions of the neighbourhood determines the level of car ownership. The location of the facility, the size of the community it serves, and the service of public transportation to the locality affect the amount of car useage and therefore the demand for parking. There are still other factors such as the parking conditions of the area, the muncipal parking policies, and the availability of adjacent car parks or vacant lots. Furthermore, the economy of providing parking for full demand which only occurs a few times a year should also be evaluated. Therefore, only a rule-of-thumb formula can be proposed which should be verified according to local circumstances. The British Sports Council proposes such a formula:

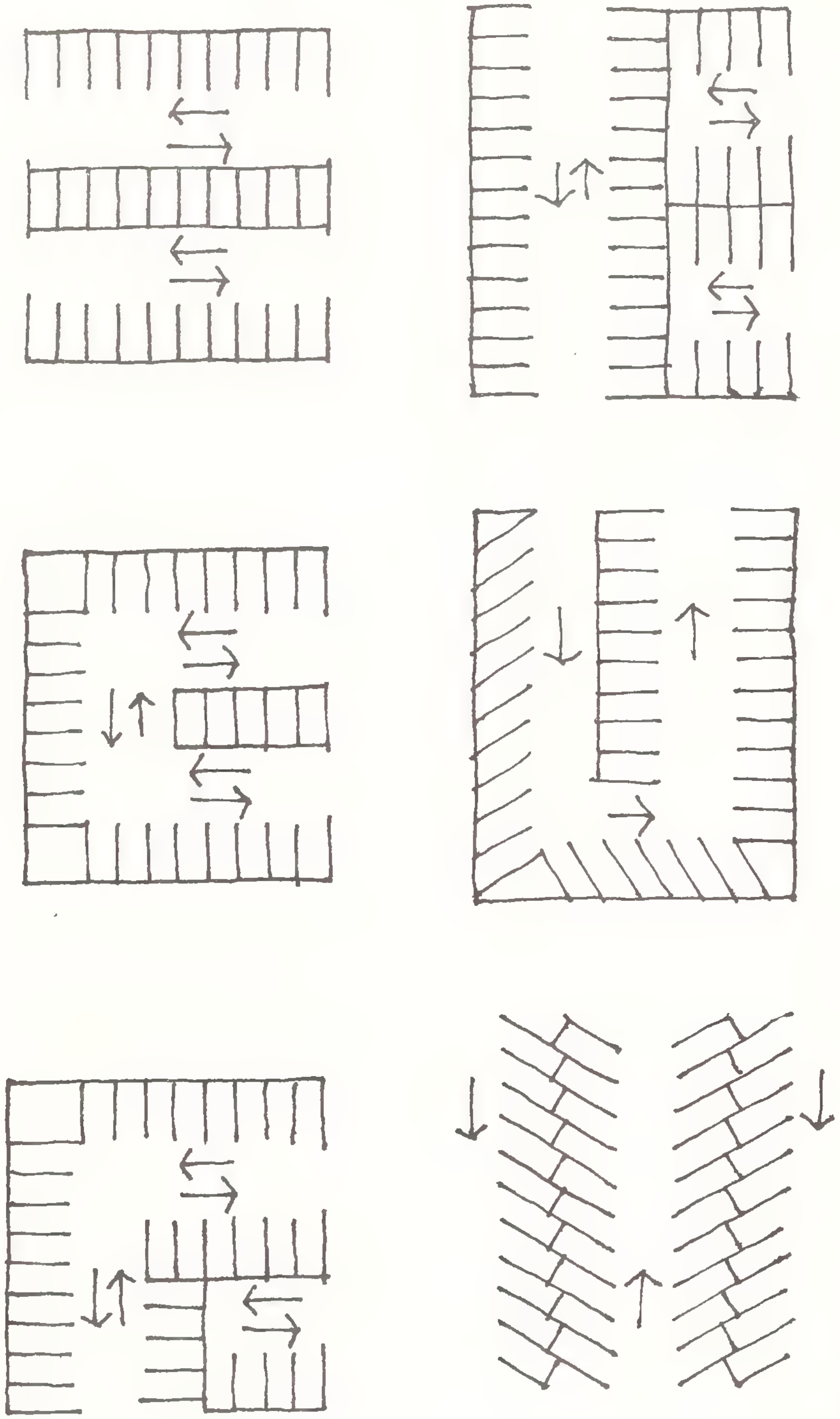
a. Staff: assume one staff in two might need to park a car.
b. Visitors: for weekdays, assume 30% attending the pool are adults, whereas at weekends 33% might be adults; and in each case assume that 45% of the adults using the pool might need to park a car; also assume that car parking will accommodate all user vehicles up to the

point at which the pool is being used to 80% capacity.

This gives a total potential parking demand of:
Weekdays: 50% staff and 11% (ie, 30% x 45% x 80%) visitor capacity;
Weekends: 50% staff and 12½% (ie, 35% x 45% x 80%) visitor capacity.
(Public Indoor Swimming Pools, Sports Council TUS Bulletin 1)

As the ratios of car ownership in Britain and Canada are different (.25 as compared to .38 car/person, 1974 data) the above figures can roughly be adjusted to fit into the Canadian context by multiplying by .38/.25 = 1.52
weekdays: 76% staff and 17% visitor
weekends: 76% staff and 19% visitor

Christopher Alexander does not recommend the separation of staff parking from swimmer parking. He wrote, "Staff-only parking is likely to create the sense that the building belongs to the staff; it is likely to contribute, substantially, to the feeling that the building does not belong to the community, and to weaken the effort made......to establish the building as community territory." (Christopher Alexander, A Pattern Language Which Generates Multi-Service Centers, Center for Environmental Structure, 1968. p. 10



TYPICAL PARKING LOT LAYOUT

HANDICAPPED PARKING

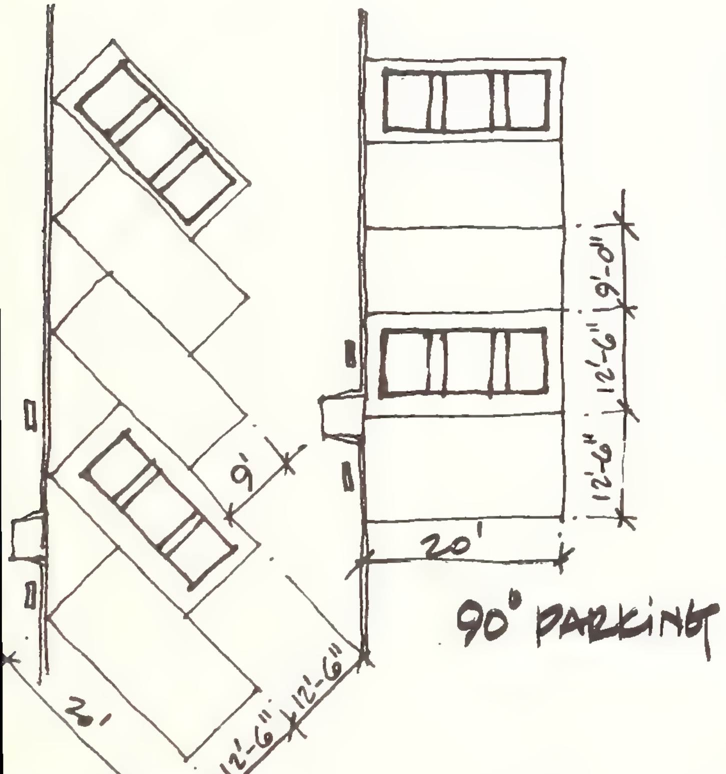
PUBLIC BUILDINGS ARE TO BE USED BY EVERYONE, ABLE-BODIED AND DISABLED.

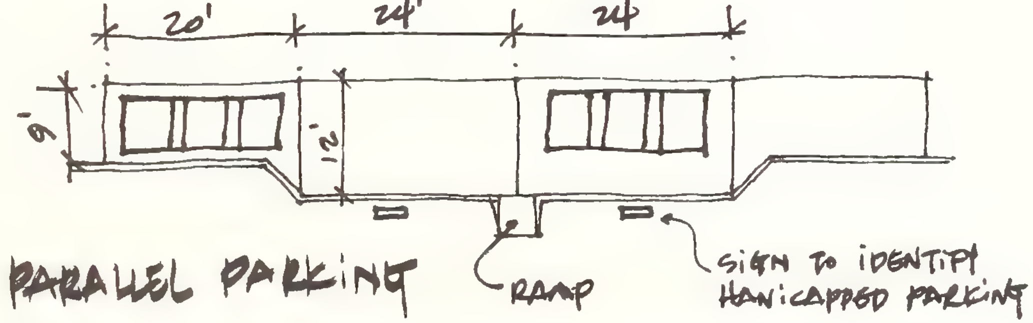
PROVIDE PARKING SPACE FOR THE DISABLED:

1. TWO SPACES PER PARKING LOT OR ONE SPACE FOR EVERY TWENTY CARS, WHICHEVER IS GREATER.
2. NOT MORE THAN 100' FROM THE ENTRANCE.
3. ONE FOOTCANDLE LIGHT LEVEL.
4. 12' x 24' FOR PARALLEL PARKING.
5. 12'-6" x 20' FOR 90° AND ANGLED PARKING.
6. 1:6 RAMP (17%) UP THE CURB.

Parking spaces of greater width are required for handicapped parking. There should be enough clearance for the parked car with the door fully open on one side for the wheelchair to be set up. For parallel parking the stall size should be 12' x 24', while 12'-6" x 20' is required for 90° and angled parking. Wherever the parking area and the walkway are not on the same level, a ramp of 1:6 gradient (17%) and 2'5" width should be provided for the wheelchair to get up to the walk. A 4' minimum clear aisle width is recommended between rows of cars parked end to end but it is noticed that people, able and disabled, prefer to travel on the driveway.

The handicapped parking stalls must be designated by signs to avoid their being used by other cars. They should have a lighting level of one footcandle and be close to major entrances, preferably less than 100' away. There should be two disabled parking spaces per parking lot or one space for every twenty cars, whichever is greater.



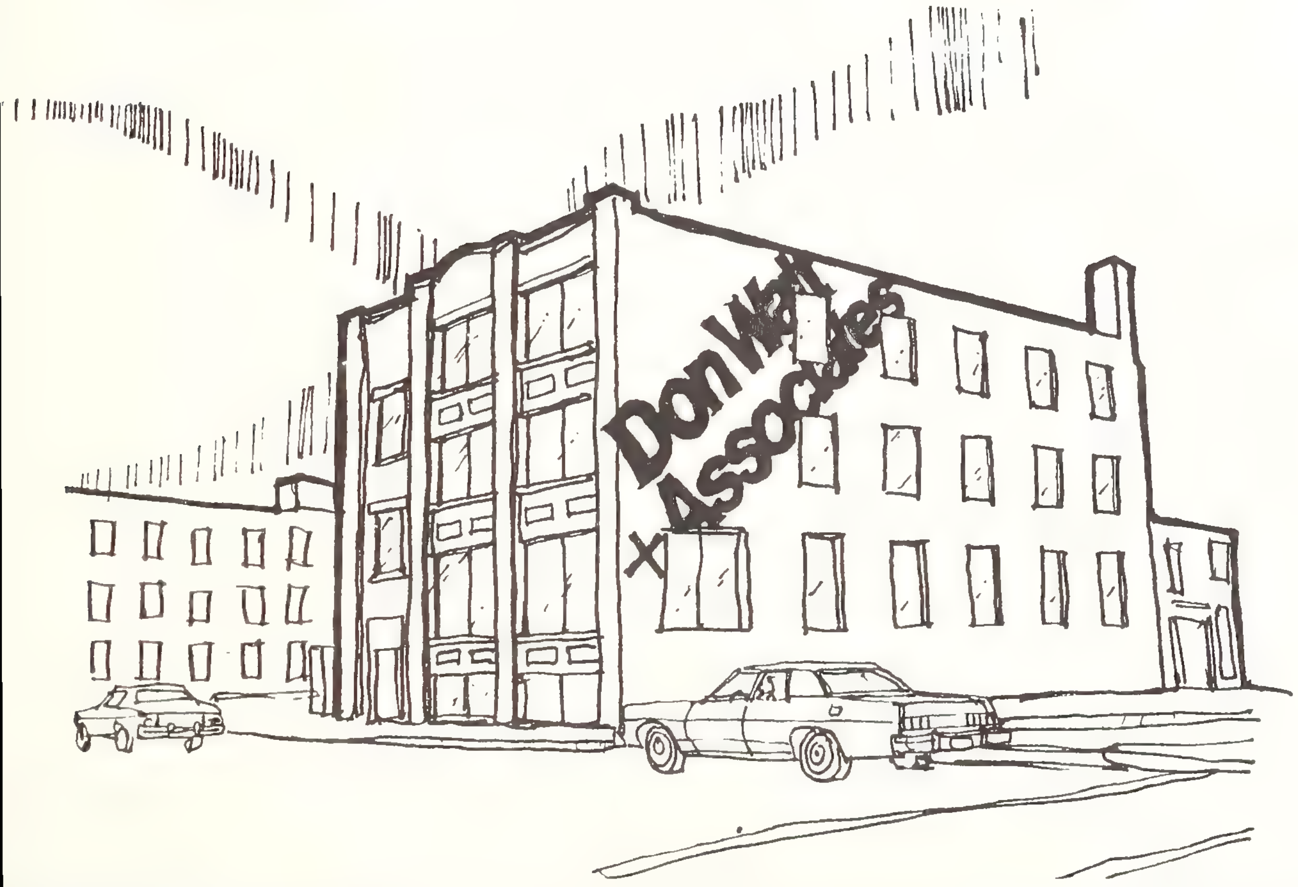


SUPERGRAPHICS

SUPERGRAPHICS CAN ADD VISUAL INTEREST TO A DULL ARCHITECTURAL ENVIRONMENT.

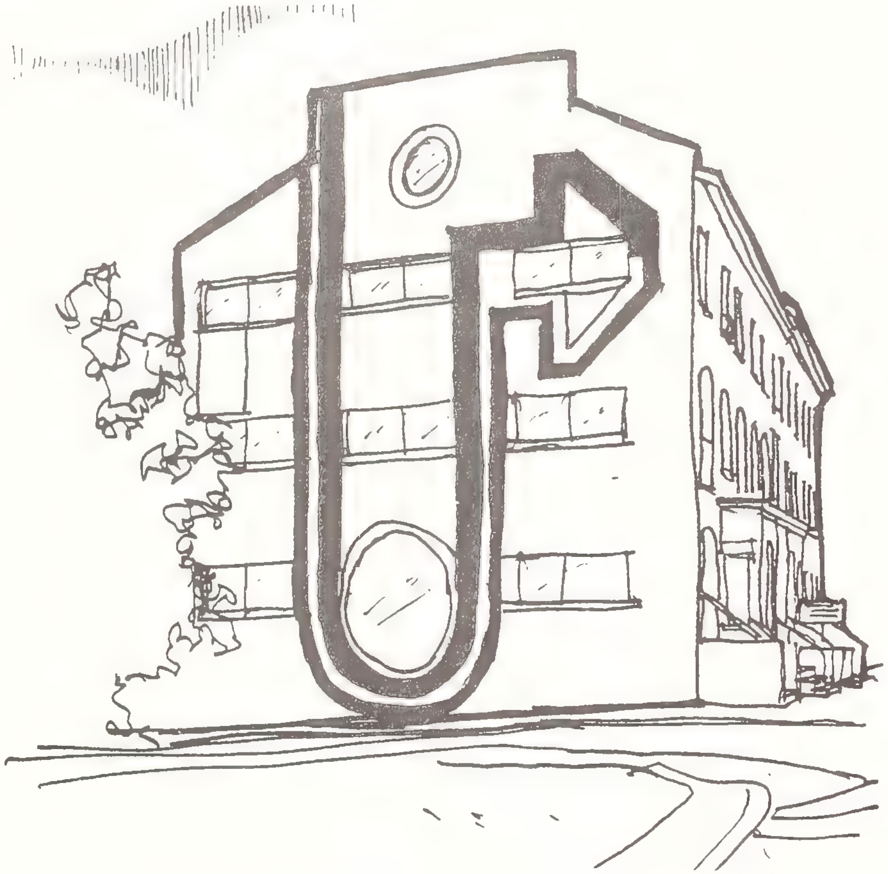
APPLY SUPERGRAPHICS TO RECREATIONAL BUILDINGS TO EXHIBIT A SENSE OF PLAYFULNESS AND INFORMALITY THEREFORE EXPRESSING THE CHARACTER OF THE BUILDING.

DON WATT ASSOCIATES
92 JARVIS ST., TORONTO



Application of colour in architecture has been traditionally cautious and bland. Building exteriors and interiors either exhibit the natural colour of the building material - wood, concrete, steel, plaster, brick, or are painted a neutral colour. In recent years, there has been a wide application of supergraphics in our living environment. Bright pulsating colours and bold graphics fill up the whole wall and add visual interest to the dull surroundings. Long corridors, subway stations, construction fences, anterooms and blank walls of buildings, that would otherwise be boring and depressing are accentuated and dramatized. Supergraphics employed in recreational buildings impart a sense of playfulness and informality. They invite casual walk-in participation in relaxed sports events rather than formal competition.

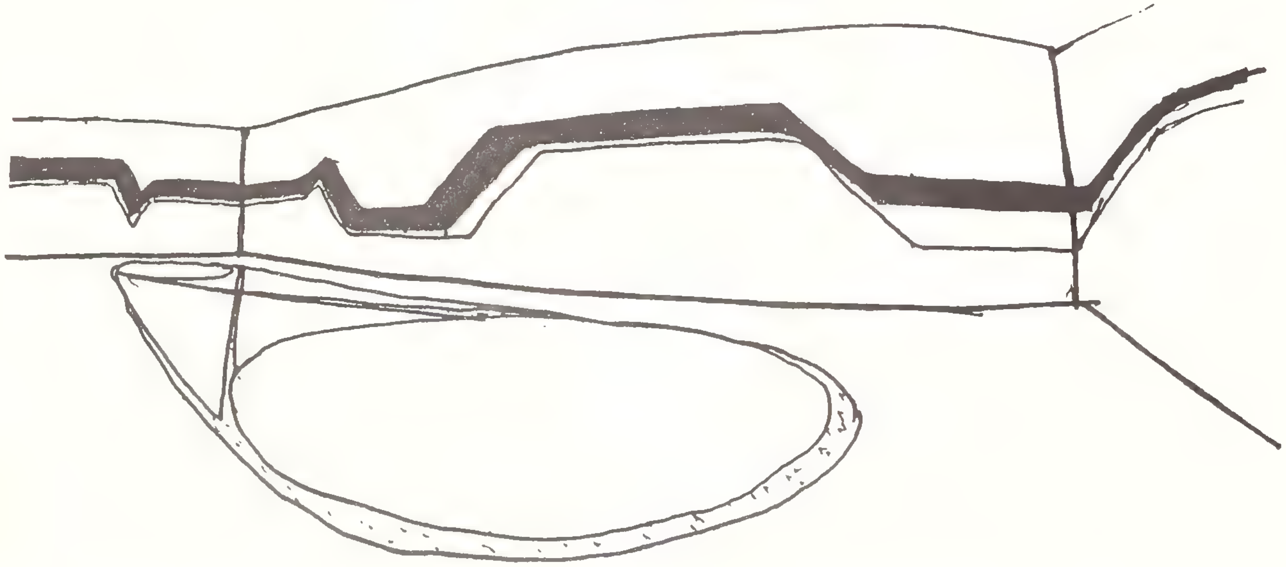
There are three kinds of supergraphics. One is over-sized signage that conveys a message as well as establishes a spatial identity, e.g. Don Watt Associates, 92 Jarvis Street, Toronto. The second type is contrary with the total absence of words, letters, symbols and numbers - an attempt to establish a mental image in the



APPLE BUILDING
SHUTER & DALHOUSIE
STREETS, TORONTO,

viewer, e.g. Apple Building, Shuter and Dalhousie Streets, Toronto. The last type is directional - it suggests motion, it flows, it vibrates, it rises and falls - a stimulation to move along, e.g. Martin Luther King Centre, Omaha, Nebraska. This type has been used in skating rinks, playgrounds, and swimming pools. Increased participation has been reported as a consequence. It has also been pointed out by swimming coaches that students may learn swimming skills better in swimming pools with supergraphics. No statistics are available to support this phenomemon and research has yet to be done to develop definitive criteria.

In applying supergraphics, any colour can be used on the background as long as there is sufficient contrast to bring out the design. Normally three or four colours at most should be used in the design in order not to distract from its effect (Deborah Sharpe, "Applied Colour", Canadian Architect, March 1975).

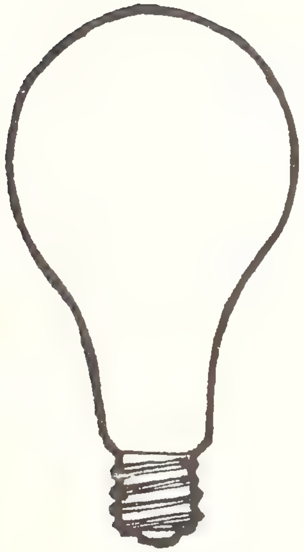


MARTIN LUTHER KING CENTRE
OMAHA, NEBRASKA.

WARM SPACE

WARM SPACE MAKES PEOPLE FEEL COMFORTABLE, INDUCING THEM TO LINGER.

USE WARM INCANDESCENT LIGHTS AND WARM COLOURS - RED, ORANGE, AND YELLOW - WHERE NEEDED; AND COOL FLUORESCENT AND MERCURY ARC LIGHTS AS WELL AS COLD COLOURS - BLUE, GREEN, GREY, BEIGE - WHERE A COLD INSTITUTIONAL ATMOSPHERE IS DESIRED.



A space can be psychologically warm or cold depending on the colour finish of the space and the colour rendition of the lights used for illumination. A warm space makes people feel comfortable, inducing them to linger. Cold space, on the other hand, gives an institutional feeling of formality, suggesting discipline and efficiency.

The origin of this spatial "warmth" can be attributed to the spectral characteristics of the wall colours and lights. Generally red, orange, and yellow are recognized as warm colours and blue, lime green, gray, beige and white are cold colours. White and off-white are also referred to as neutral colours. Lights with "warm" spectra are incandescent lights which project a warm yellowish glow. Fluorescent lights, though available in no less than seven "whites" - from a very cool blue-white to a pinkish white - give a cool colour rendition. Mercury arc lights give a cold white illumination also.

Incandescent lights are less expensive to install and provide a point source of warm light and if desired they can be focused or directed over a limited area. They are more difficult to maintain and are considerably more expensive in operating cost than fluorescent and mercury lights. At present most indoor swimming pools are using mercury lamps due to their long life span and their more efficient output; but mercury lights if turned off, cannot be turned on again until the bulb temperature cools down. This might cause inconvenience to the pool management. The other disadvantage is that the "cold" light can be accentuated by the presence of large white wall areas to psychologically chill the swimmers. The pool walls can be painted warm colours to remedy this effect (see pattern Supergraphics). Neutral colour walls are of high brilliance and can do serious damage to the eye.

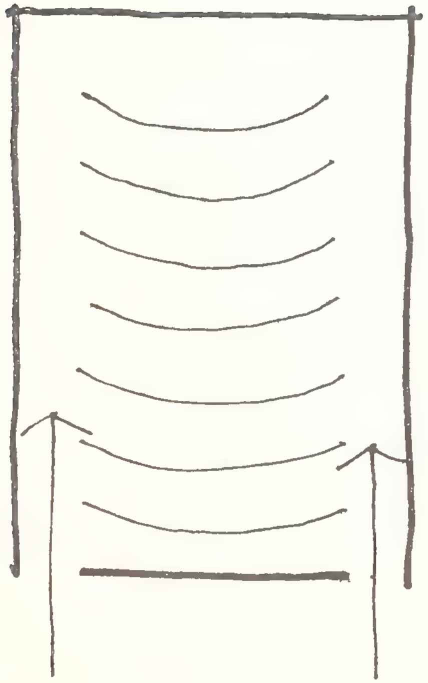
The strong glare can cause "congestion in the eyes, inflammation and scotoma. It can aggravate muscular imbalance, refractive difficulties, near-sightedness and astigmation - perhaps not in a day or week but over a prolonged period." (Faber Birren, "Reactions of Body and Eye," AIA Journal, September 1972). Some pool managers feel that the reflection of brown, green or red colours on water makes it appear contaminated and prefer blue or light-green colours.

Fluorescent lights are appropriate for changing rooms and circulation routes as they provide bright, clean, shadowless, institutional cool light, prompting people to be efficient and move along. Entrance hall and social areas would require some high-lighting and a warm welcome atmosphere. This can be provided by incandescent spot-lights or flood-lights.

ENTER UNOBSERVED

IN ANY PUBLIC SPACE WHICH SERVES FOR A VIEWING ACTIVITY, SUCH AS SPECTATOR STANDS, LECTURE ROOMS, CHURCHES, CINEMAS, THE LATECOMERS FEEL THEY ARE INTRUDING ON THE REST OF THE GROUP.

PROVIDE AN ANONYMOUS ENTRANCE WHERE THE LATECOMERS CAN SURVEY THE GROUP WITHOUT BEING OBSERVED, AND ENTER WITHOUT CAUSING TOO MUCH DISTRACTION.

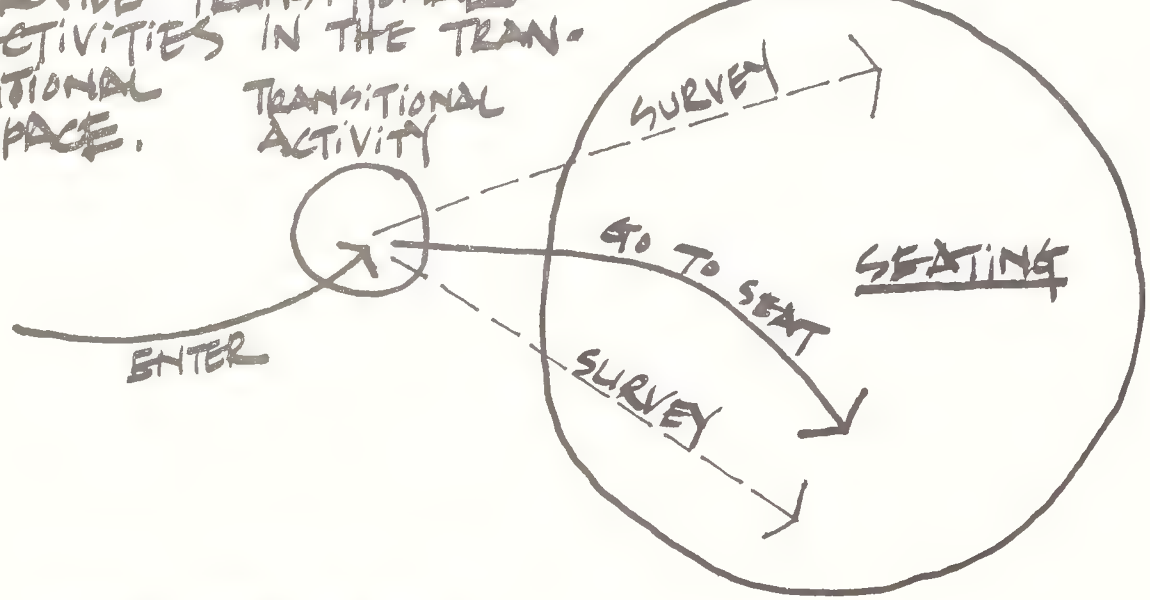


ANONYMOUS ENTRANCE AT THE BACK OF ROOM.

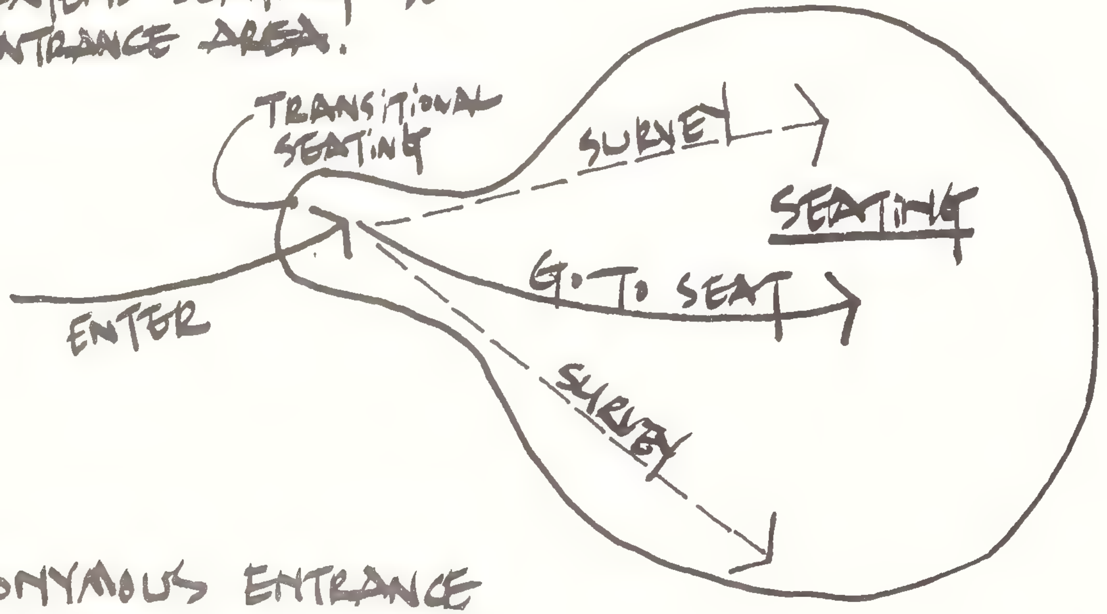
In a room of people already settled down and engaged in attentive viewing, the latecomer feels like an intruder to the crowd. The process of entering, surveying the crowd, looking for a seat and getting to the seat distracts the crowd's attention. After a few minutes he might find the performance boring and would rather move on. He would hesitate to leave right away because his witnessed entrance stands for a commitment to stay for a while. He is also afraid that his leaving may cause further annoyance to the people around him.

An anonymous entrance to a space can be made at the back rather than the front of the room. the latecomer enters unobserved. Since he approaches from the back and makes minimum eye contacts with the crowd, he does not feel as embarrassed as he leaves because he thinks that the crowd does not recognize his face. He therefore has the liberty to explore the space but no commitment to stay. At this entrance, there should be sufficient transitional space for the latecomers, in small groups, to survey the space before they proceed to their seats. Casual spectators, on the other hand, might choose to just stand and watch for a short time without

(1) PROVIDE TRANSITIONAL ACTIVITIES IN THE TRANSITIONAL SPACE.



(2) EXTEND SEATING TO ENTRANCE ~~AREA~~.



ANONYMOUS ENTRANCE AT THE FRONT OF ROOM

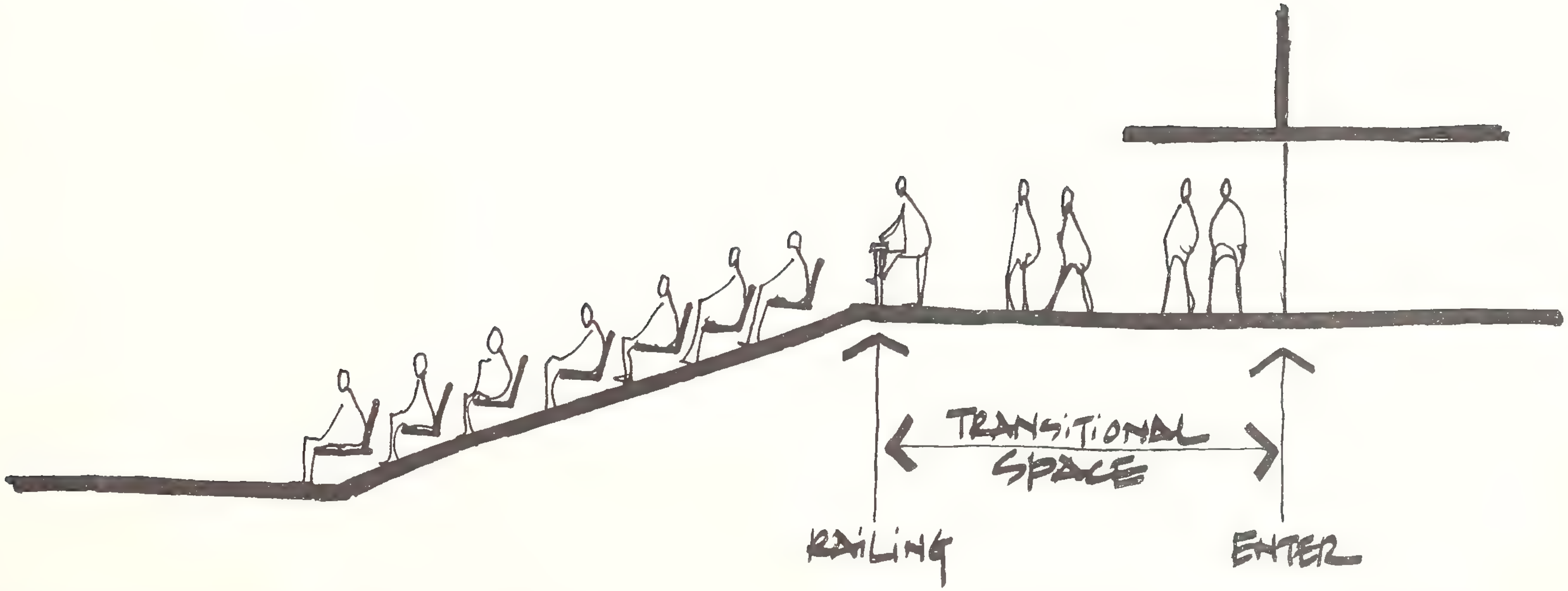
sitting down. There should be plenty of standing room and railings to lean on adjacent to the entrance to provide for this type of user.

An anonymous entrance can also be made at the front of the space. In order to enter unobserved, the act of surveying should be made unobstrusive as it involves much eye contact. There are two solutions:

(1) Provide transitional activities in the transitional space: this gives the latecomers a legitimate reason to enter the space to perform these activities, during which they have ample time to look for a seat. Then they can proceed straight to the seat without attracting too much attention. Depending on the type of space, these transitional activities can be drinking from a drinking fountain, reading a bulletin board, or leaning on a railing to watch the performance.

(2) Extend seating to entrance area: the latecomers can treat it as a type of transitional seating before they get to a better seat. It should be of a lower quality in both seating comfort and viewing angle than the other seats so

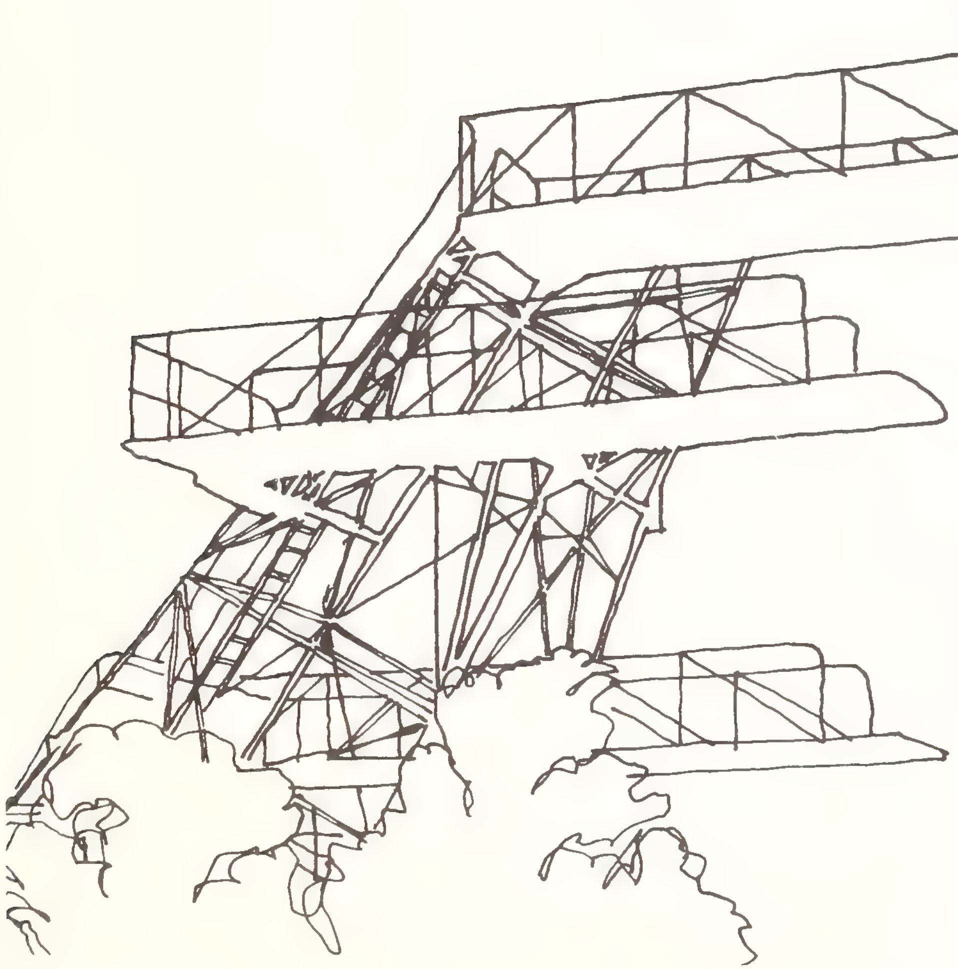
that the spectators will move on to better seats should they decide to stay. It can be just a bench against the wall. It should be separated from the traffic but its location obvious so that the latecomers can see it once they have entered the space.



DIVING TOWER AS STAGE

DIVING IS A SPECTACULAR PERFORMANCE.

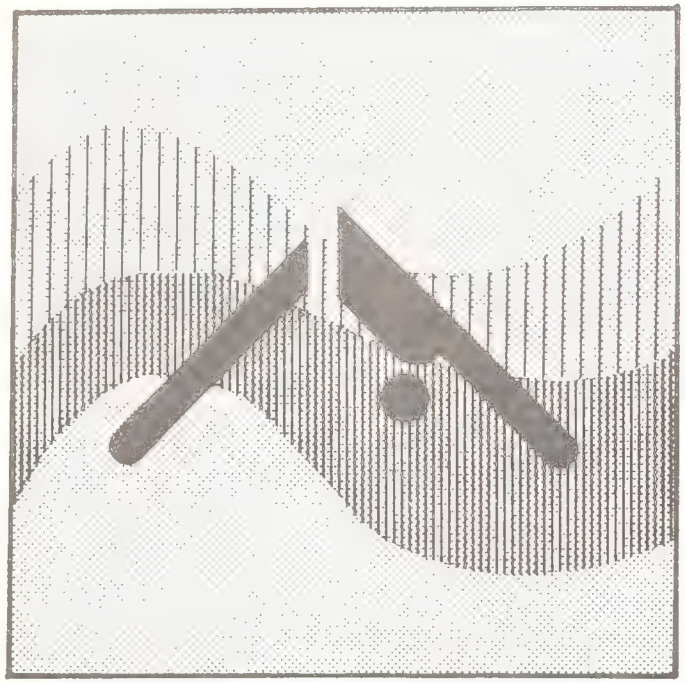
DESIGN THE DIVING TOWER AND BACKWALL AS A STAGE ON WHICH THE DIVER PERFORMS. USE DARK BACKGROUND COLOURS SO THAT THE PERFORMANCE STANDS OUT.



Diving is a spectator-oriented sport. The diver is like a performer and the diving tower and the void above the pool are the stage. It is, therefore, important that the performer is made to stand out by using a contrasting background and stage so that the performance can be easily observed even from a distance.

The wall behind the diving tower is the backdrop to the performance. There should be no windows allowing any light in to back-light the diver. Direct glare causes discomfort to the viewer and obstructs their vision. North-facing windows or translucent curtain walls provide too much contrast and the spectators will lose all facial and physical details of the divers. The wall should be just a plain solid wall with no other distractions like signs, murals, banners, flags, or supergraphics.

The diving tower is usually of a white or neutral colour. Perhaps more thought should be given to the colour selection. A darker colour would contrast with the performer better. The same colour should be used for the backwall so they act as one integrated background complementing the performance rather than each other. White or black should not be used as there are both white and black athletes. Gray and brown colours are not desirable either as their reflection on water makes it look muddy. Blue is a good colour but it is too close to the water colour and the divers would lose their plane of reference and orientation during the dive. A dark yellow or orange colour is suggested but other colours that satisfy the same criteria are also acceptable.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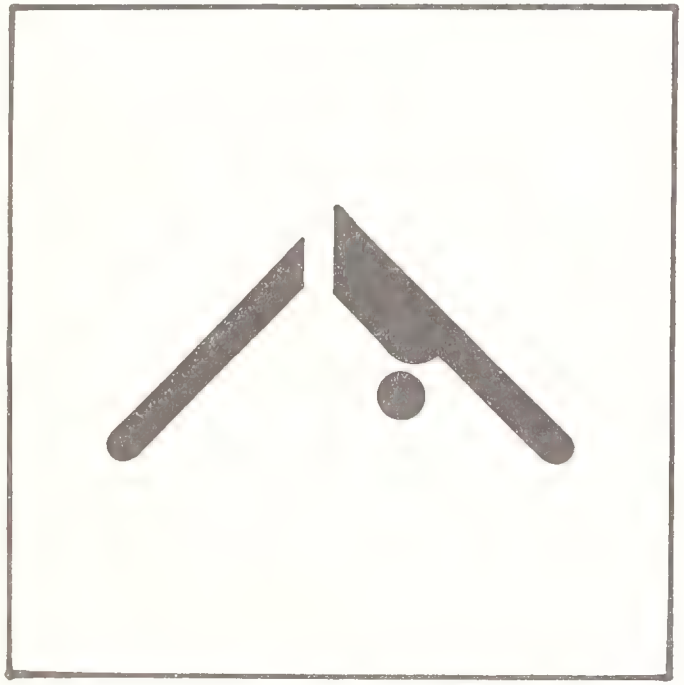
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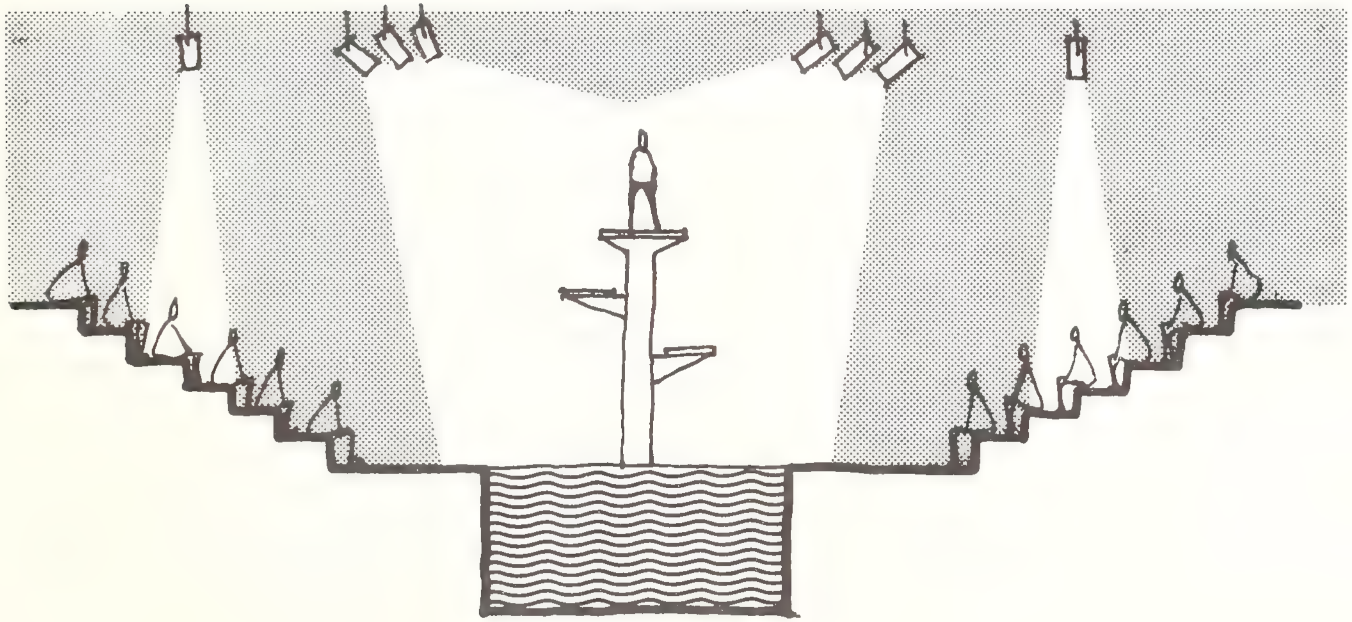
1 BUSY BACKGROUND MAKES IT DIFFICULT FOR THE SPECTATORS TO FOLLOW THE ACTION.

2 PLAIN BACKGROUND CONTRASTS THE PERFORMANCE.

DIM SPECTATOR LIGHTS

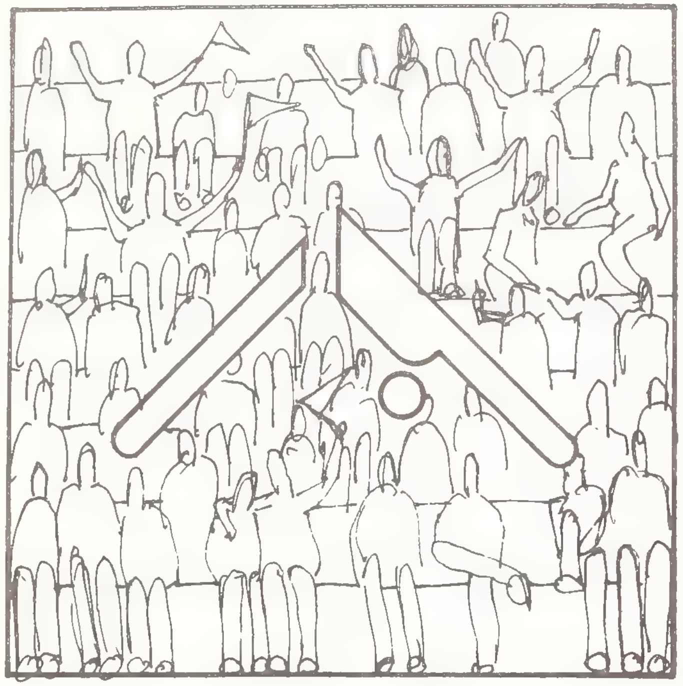
BRIGHTLY-ILLUMINATED SPECTATOR GALLERIES ENCOURAGE MOVEMENT, SHOUTING AND OTHER ACTIVITIES.

IN DIVING OR SYNCHRONIZED SWIMMING SHOWS, DIM THE SPECTATOR GALLERY LIGHTS AND HIGHLIGHT THE "STAGE" TO FOCUS ATTENTION ON THE PERFORMANCE.

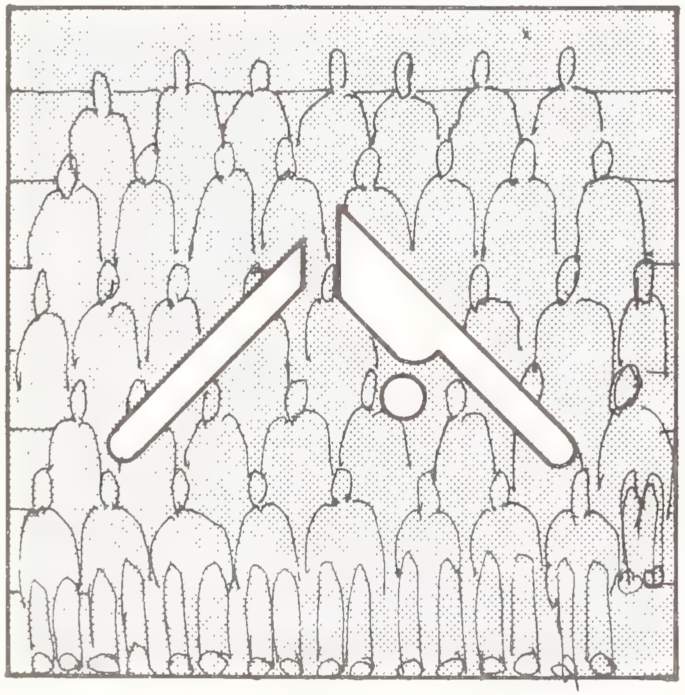


The lighting level of spectator galleries in public facilities is an efficient means of crowd control. An example of this can be found in theatres . Before the performance the light level is brightest allowing the crowd to chat, to find their seats and settle down, or to get up and move around. When the performance starts the lights dim, signalling the crowd to become quiet and limit the conversation to whispers. During the performance the illumination is even dimmer while the stage is kept much brighter in order to focus attention on the performance.

We do not find a parallel treatment in many diving pools. Diving is as much a performance as ballet or other art forms. Perhaps because it is more sport-natured the spectators are treated as another stadium crowd. Stadium sports like track events or ball games place individuals and teams in direct competition. The stadium crowd usually cheers, shouts and waves flags during their viewing. A higher light level in the spectator area is needed to illuminate all these activities. On the other hand, indirect competitions such as diving or gymnastics do not involve cheering during the



BRIGHTLY-ILLUMINATED SPECTATOR GALLERIES ENCOURAGE MOVEMENT, SHOUTING AND OTHER ACTIVITIES.



DIMLY LIGHT GALLERIES TO CONTRAST THE PERFORMER AS WELL AS TO PROVIDE A NON-DISTRACTING BACKGROUND.

performance. Much attention should be drawn to the individual performer and silence is desired. This can be achieved by diming the spectator illumination and highlighting the 'stage' and the performer. Spot lights could also be utilized to focus on the performance. The dim gallery lights discourage the spectators from making excessive movement or any other distracting actions. It also signals that only personal conversation is allowed.

The best seats to watch diving are those closest to the diving tower providing a view from the side. The galleries on the opposite side act as backdrop to the performance. They should be dimly lit to contrast the divers as well as to provide a non-distracting background.

Swimming contests are a different situation and require different light treatment. They are direct competition and involve spectator cheering. Light level on galleries should be brighter to allow various cheering and flag-waving actions. It should not be so bright as to divert attention from the pool itself however.

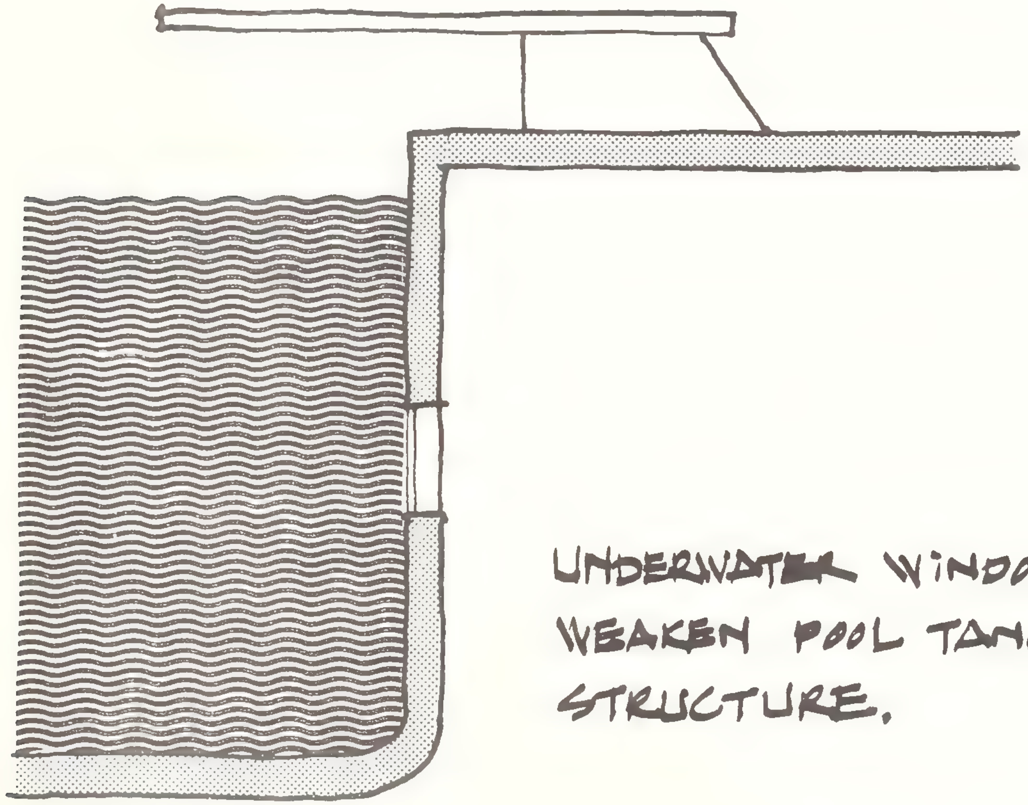
EXPENSIVE UNDER-WATER WINDOWS

UNDERWATER WINDOWS ARE EXPENSIVE AND LITTLE USED.

THEY ARE A LUXURY ITEM AND SHOULD ONLY BE CONSIDERED IN DIVING, SUB-AQUA AND HIGH STANDARD TRAINING POOLS.

Underwater windows in swimming pools are often overrated as a spectator attraction. They are little used most of the time because of their poor accessibility. They cannot always be conveniently located at the lobby or the restaurant area. Moreover, pool activities of most visual interest occur on the water and not underwater. The installation of these windows pierces the pool tank and weakens the tank structure. Additional reinforcements are expensive. Precautions are required to guard against leakage and chlorine corrosion of the sealant around the windows. Underwater windows should therefore be regarded as a luxury item in community swimming pool design.

Diving pools and sub-aqua pools present more spectacular activities, and justify the installation of underwater windows. Regional training pools also require such windows for monitoring the training. In this case audio links and television broadcast provisions are necessary.

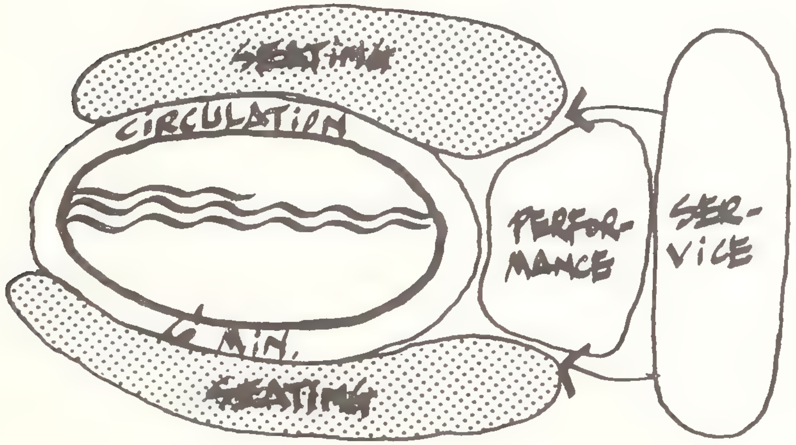


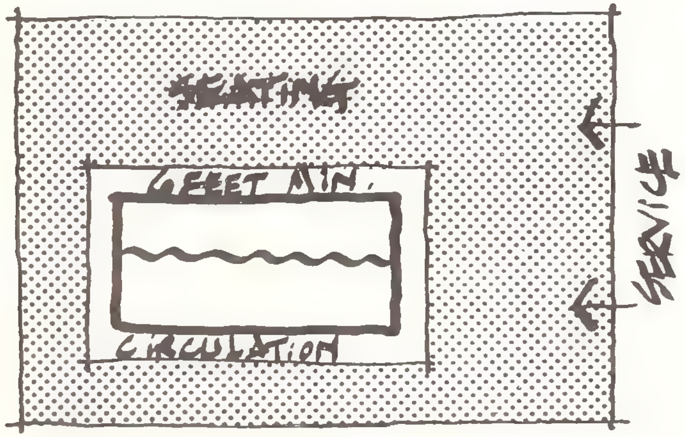
UNDERWATER WINDOWS WEAKEN POOL TANK STRUCTURE.

POOL DECK FOR SOCIAL FUNCTIONS

THE POOL IS A PLEASANT SPATIAL ELEMENT.

WHEN THE POOL IS NOT USED FOR SWIMMING, USE IT AS A BACKDROP FOR SOCIAL FUNCTIONS OR AS A STAGE FOR PERFORMANCES, AND THE POOL DECK FOR DINING.

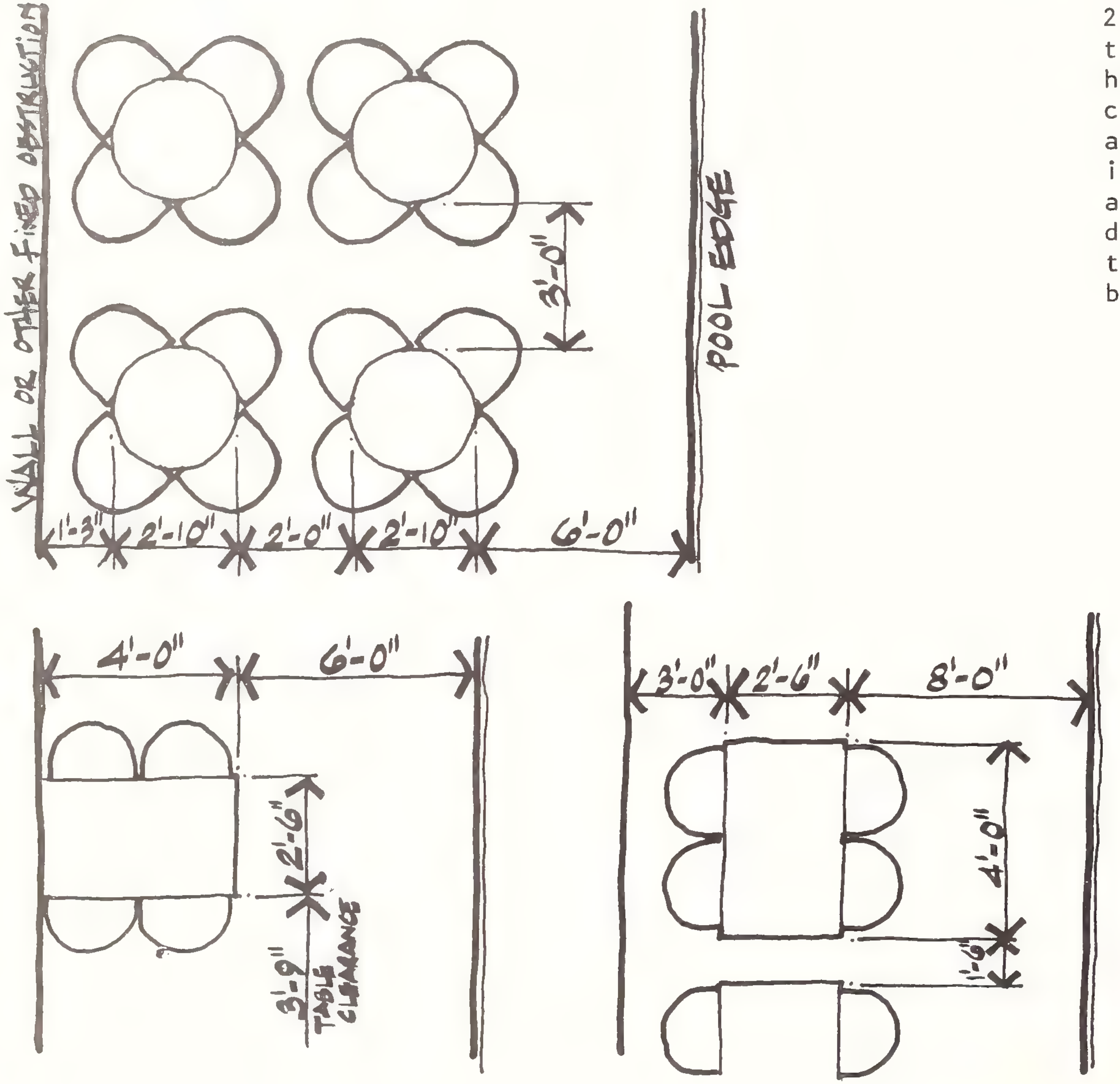




A FUNCTIONAL POOL DECK FOR SOCIALS AND PERFORMANCES.

In off-seasons or evenings the pool area could be opened for use by social functions with the pool as stage or backdrop. This arrangement could be a considerable source of income, helping to support the operation of community pools. Outdoor pools in Ontario are hardly used beyond the summer months, just until the water gets a little chilly to swim in. However, they are a perfect backdrop setting for banquets, parties, or wedding receptions, especially at night with the underwater lights on. In summer evenings, the pool can be used as a stage for various water activities, or fashion shows and band performance on a floating stage or a bridge. The pool deck becomes a dining area just like in a night club. An indoor pool hall can thus be used to its full advantage all year round.

This alternative use of pools is most suitable with free-form learner pools in nicely landscaped surrounds. Lawn furniture that is easily stored can be used to enhance the patio setting (see pattern Comfortable Parents' Viewing Area). They should be arranged around the pool at performances and along one side of the pool when using it as a backdrop. Minimum deck width should be 10', of which 6' is allowed for clearance from pool edge. At least one wide deck of 20' or more should be allowed at the shallow end of the pool for heavier service traffic. Sufficient storage, kitchen facilities and possibly a bar should be included in the design to accomodate the dining use. A dry traffic route, not going through the locker rooms, is to be provided for the guests.



POOL DECK
SEATING
ARRANGEMENT

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